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PLANTING AND AGRICULTURE IN COLOMBIA, SOUTH AMERICA.

(Special Report to the Foreign Office from W. Robt. Thomson.)

TOLIMA: ITS AGRICULTURAL PRODUCTIONS.

THIS department is situated in the southern part of the great Valley of the Magdalena, extending from 2° to 6° north latitude. And the department is embraced within the two great chains of the Colombian Andes, the Eastern and Central Cordilleras, which continue nearly parallel from latitude 2° 5' to 5°. Within these bifurcations of the Andes is also comprehended a large portion of the department of Cundinamarca, thus including the lofty and extensive savannah on which the city of Bogota (8,600 feet above sea-level) is situated. The average height of the Eastern Cordillera is from 12.000 to 13,000 feet above sea-level, whilst the highest ridges of the Central Cordillera are covered with perpetual snow, the culminating peak, Tolima, from which the department derives its name, being upwards of 18,000 feet, and the highest peak of the Andes north of the Equator. The River Magdalena, from its source, flows through the department some 400 miles to the river-port town Honda, which is the terminus of steamboat navigation with the coast, distant 600 miles. At Honda rapids in the river preclude continuous navigation higher up, but immediately above these rapids the river is again navigable for steamers for 100 miles, and for native craft 300 miles. The area of Tolima is 18,434 square miles, and the population 230,000. The department comprises a small area as compared with the total area of the Republic, namely, 513,845 square miles.

The plans and lower hills extending from the River Magdalena occupy an area of several thousand square miles, and the climatic conditions up to an altitude of from 3,000 to 4,000 feet are purely tropical, *tierra caliente.* Within this zone nearly all the inhabitants of the department are settled. The chief industrial pursuit, in common with the rest of the Republic, is cattle farming.

A distinctly more temperate zone prevails between 4.000 and 6,000 feet above sea-level, *tierra templada.* This region consists of numerous ramifications of mountains, which are to a large extent covered with forest. Here the cultivation of coffee is becoming an important industry, a subject dealt with later on.

A still higher zone, designated *tierra fria*, extends from 6,000 feet up to the coldest climate in which European grains and vegetables can be grown. Potatoes and wheat are grown in patches at elevations ranging from 6,000 to 9,000 feet, and barley and oats thrive up to 12,000 feet.

The agricultural and planting prospects of Tolima, like those of the Republic in general, are only beginning to emerge into the domain of commerce. Up to a dozen years ago, for example, the value of the exportation of quinine-yielding barks, cinchona, and cuprea, obtained from the forest, was for many years far in excess of the value of the exportation of all other vegetable products combined. This bark business attained its maximum development in 1881-82, when the value of the article exported amounted to some 30,000,000 dol. Since then this trade in Colombia, notwithstanding that the trees abound in the forests, has completely collapsed, owing to the extensive cultivations of cinchona in the east.

As I have already said, the greatest industry of Tolima is cattle farming. The area of land appropriated to pastoral purposes practically occupies the whole of the zone which I have in the foregoing designated *tierra caliente*—several thousand square miles. Official statistics give the total number of horned cattle, horses, mules, and asses in Tolima at 390,000, the total number throughout the Republic being 3,465,000. There are also in the Republic goats, sheep, and swine, 3,487,000. Great cattle farms ("haciendas"), each containing from 1,000 to 4,000 cattle, abound throughout the department. To the favourable positions of Tolima, *i.e.*, in proximity

to the most densely populated and richest community in the Republic, the community inhabiting the elevated savannah of Bogota, must be attributed its dominant position in regard to cattle rearing. Thus a lucrative market is assured for many thousands of cattle annually. These lowland cattle, though very inferior both in point of size and quality to those on the cold savanrah, are reached under conditions calculated to assure their production at a minimum cost, that is to say, at a much cheaper rate than is practicable in the cold regions.

The thousands of square miles of natural pasturage on the plains and lower hills of Tolima assume during the rainy seasons the most beautiful verdure. But in the alternate season of drought the general aspect is that of a desert. These lands were originally acquired at a nominal cost. No conservation of the natural fertility of the land has ever been taken into consideration. On the contrary, the natural grasses, intermixed with scrub or brushwood, have been systematically burned from year to year. and the burnings effected during the most scorching periods of drought. The principal object attained by this process of despoliation is the reproduction of new and tender herbage or pasturage, which, with the advent of the rainy season, forthwith covers the parched surface. Vast pastoral regions—scores of thousands of square miles—in tropical America are thus maintained. Half a century, or it may be a century, of this treatment suffices to extinguish almost every trace of fertility in the soil. In Tolima alone hardly less than 2,000 square miles of savannahs and hills, ascending to some 3,000 feet, have in this way been transformed into comparatively barren wastes. And in other parts of the Republic many thousands of square miles have similarly lapsed by this devastating process.

This persistent burning of the savannahs and hills for crops of renewed pasturage plays desperate havoc with all other vegetation, trees and brushwood. Isolated palm trees, with their intensely hard trunks and endogenous structure, together with groups of brushwood in sheltered or humid spots, sometimes withstand the fury of the flames. There is, however, one phenomenal exception to this subversive power of the fires. A humble tree with contorted and rugged trunks and branches and scabrous leaves, a tree presenting the most subdued and weird aspect conceivable; this pigmy tree not only resists the fury of the flames, but fire is actually congenial and subservient to its existence, for the tree, instigated by the conflagrations, forms itself into great plantations. The name of this tree is chaparro (*Rhopala obovata*), indigenous to Colombia and other South American countries. It attains a height of 15 to 20 feet, and its distorted trunks measure from 9 to 12 inches in diameter. It is widely distributed in Colombia, for I have found it at the Sierra Nevada of Santa Marta, and dispersed inland 1,000 miles from the sea. In contact with the great forest it maintains a precarious existence. But as already explained, it usurps dominion in places where no other treo can grow. In Tolima it abounds on the slopes and ridges of the hills at elevations from 1,000 to 3,500 feet. In this department alone hundreds of square miles of the lower hills which have been reduced to sterility by incessant burnings are occupied by this diminutive tree, and it assumes the aspect of vast systematically formed and well-kept plantations. This is more than a triumph of the "survival of the fittest."

It is very remarkable that these fire-begotten plantations are nowhere crowded to excess; on the contrary, the trees are so regularly placed that their aspect vies with that of the most carefully formed plantations. There is a popular belief in Tolima, where alluvial gold abounds, that this tree flourishes only on those seductive lands, serving as a guide to searchers after the precious metal. The bark of the tree is peculiarly constituted. It consists of a congeries of integuments or semi-detached layers. The outer portion, about half-an-inch thick, performs no organic function, and this portion of the bark, in conjunction with its peculiar compositions, protects the inner vital integuments from injury by fire. The form and structure of the tree may have originated from the severe ordeal through which it has survived. For instance, according to the theory of natural selection, some animals when they migrate into a colder climate become covered with thicker fur. As we have seen with regard to this plant, the powers of nature have been encroached upon, *i.e.* the plant having emerged from a state of nature it has made for itself a law of its own, for it has triumphed over the most disastrous element to all organic life. The hundreds of square miles of worn-out land covered by this beneficient tree in Tolima alone are undergoing a slow process of amelioration which, moreover, could be easily accelerated by the interposition of a few simple devices.

It is noteworthy that the chaparro prefers the slopes and ridges of tho hills to the flat savannahs, on which it is seldom found in any considerable quantity, though widely dispersed. Fire ranges with far greater fury on the slopes and ridges of the hills than on the plains. I, however, attribute this preference of the plant for the hill-sides to the pernicious influence of the accumulations of water on the plains during the rainy season.

The illustrious Humboldt, during has travels in South America, noted the dispersal of this plant on the vast llanos stretching from the Orinoco, &c. These llanos are, for the most part destitute of vegetation other than *Gramineæ*. The only trees that were found on many parts of these dreary wastes were specimens of chaparro and in more humid spots a palm. Thus, referring to the llanos which he traversed, he says, "For many square miles not a tree to be seen, but where a few solitary trees are found they are, in humid districts, the Mauritia palm, and in arid spots the *Rhopala complicata*."

Vast deserts and semi-deserts abound throughout the tropical world many hundreds of thousands of square miles. It may be that the chaparro is destined to play an important part in the reclamation of these illimitable wastes for the decomposed leaves gradually from a crust of vegetable mould.*

COFFEE.

In recent years a great impetus has been given to this Coffee cultivation in Colombia. The most reliable statistics show the following export returns:—

Year.	Value. Dollars.
1877-78	810,000
1890	7,500,000
1894	10,000,000

It may be safely estimated, in view of the continual large extension of this cultivation, that in the course of 2 or 3 years the total output will have augmented to 15,000,000 dol.; no less than 37,000 tons.

I am unable to state the proportion of coffee which Tolima contributes, but it may be estimated at about 300,000 dol., a return greatly in excess of the production half-a-dozen years ago. The districts of Tolima in which this cultivation is chiefly carried on are distant inland from Honda from 100 to 200 miles. Thus, bearing in mind that coffee is cultivated at from 700 to 900 miles from the seaport Savanilla, credit is due to the enterprising planters. The River Magdalena, with several of its contributaries, afford to a large extent the means of transport to Honda. The produce is carried by mules from the mountain slopes to the river, thence in rafts down the current to Honda, from 3 to 5 days' journey. From Honda, whence also is shipped the produce from the great coffee-growing province of Cundinamarca, the coffee is conveyed by steamers, and two short railway routes, to the sea—600 miles. Independently of the Upper Magdalena and its contributaries, many thousands of mule-loads of coffee are annually brought to Honda, partly from Tolima, but chiefly from Cunnamarca, thus from 3 to 5 days' journoy to Honda only. The cost of transport from the plantations to the coast amounts in English money from 1*d.* to 1½*d.*, thus respectively 9*l.* 6*s.* 8*d.*

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* An extract from a letter of mine to the Director of Kew Gardens relative to chaparro was published somo years ago.

and 14*l.* per ton, a very heavy item. In this connection it may also be mentioned that from several of the large growing coffee provinces of the Republic the cost of transport is still higher.

Notwithstanding the great difficulties appertaining to distance from the sea, and the consequent cost of transport, the Tolima planters are quite able to compete with planters in far more favorably situated countries, countries which are in a position to transport coffee to their seaports at a comparatively trifling cost. Magnificent land abounds on the colossal Andes most admirably adapted for the cultivation. Well cultivated plantations on these Cordilleras are unsurpassed by those of any other country, and this observation applies not only to the quality of the produce, but also to the quantity. Land is obtainable, in general, at a nominal cost; and it is available to a large extent, though it may be mentioned, in the adjoining department of Cundinamarca, where great enthusiasm prevails relative to coffee cultivation, and where it is being much more extensively planted than in Tolima, the price of the more conveniently located sites for plantations has augmented very materially; indeed, as much as 40 and 50 dol. (paper currency), say 2*l.* 13*s.* to 3*l.* 7*s.* at exchange now ruling of 15 dol. to 1*l.* per hectare (2½ acres) is now paid.

The extension of this cultivation in Tolima, and this applies to the whole country, is in general confined to districts accessible to settlements or villages. More remotely removed from populated districts widely extending mountain slopes, eminently fitted for coffee, remain in a state of nature. It may also be noted that the quality of the labour itself is satisfactory, for it is on the whole industrious and intelligent. 80 c. (about 1*s.*) per day Colombian currency, are the average wages for peons, and for women about 50 c. (about 8*d.*).

As regards the productive capabilities of these Cordilleras, coupled with the labour resources, *i.e.*, where it is sufficiently abundant, it may be stated that the cost of coffee production at the plantation ranges from 30 to 35 dol. per mule-load of 250 lb., or from 12 to 14 dol., Colombian currency, per 100 lb. With the rate of exchange with has prevailed during several years (1 dol. ruling rather less than 2*s.*), this shows that planters are acquiring enormous profits. With money at par the nominal cost of production would be about the same, although in reality the price measured in gold would have much more than doubled. It should, therefore, be remembered that to the depreciation of Colombian currency must be attributed in great measure the rapid expansion of the coffee industry. At the same time exceptionally high prices for the article have ruled during recent years, a result partly due to the abolition of slavery, in coffee-growing countries, and partly to the revolutionary movements in Brazil, where coffee is grown on a gigantic scale Now that coffee has become a staple industry of Colombian there can be no doubt that the country is able to maintain a prominent position among all rivals.

The number of coffee trees planted per hectare (2½ acres) in Colombian averages about 1,500. The general averages yield per tree per annum on well-kept plantations is 1½ lb., or 2,250 lb. per hectare—900 lb. per acre. On many other plantations the average yearly crop does not exceed 1 lb. per tree—600 lb. per acre. Thus the number of trees planted per acre in this country strikingly contrasts with the number planted in British Colonies, where twice as many are planted per acre, notwithstanding heavier crops are secured in Colombia. In the palmy days of coffee cultivation in Ceylon the average production was 5 cwt. per acre.

One of the chief elements of success appertaining to this cultivation in Colombia must be assigned to the systematic inter-planting of shade-trees with the coffee. At altitudes ranging from 3,000 to 5,000 feet more densely-foliaged shade-trees are employed than is the case at plantations between 5,000 and 6,000 feet, where a slender shade is afforded by a species of *Cassia*. The shade-trees utilised at plantations situated between 3,000 and 5,000 feet are a species of *Erythrina*, and another leguminous tree, a species of *Inga*, which latter is becoming very generally adopted by planters. I would strongly recommend this *Inga* for adoption by British colonial coffee planters, as it is most admirably adapted for the purpose. It grows rapidly, and the large compound leaves fall abundantly at the season in which the plantation requires the least degree of shade, whilst the abundance of fallen leaves from this tree check in a very marked manner the irrepressible growth of weeds. Moreover, the general result of the beneficial influence of this congenial shade reduces to a minimum all cultural expenses; indeed, it may be safely computed that the good offices of this tree curtail the cost of actual cultivation to the extent of some 50 per cent. as compared with coffee devoid of shade. It is a remarkable fact that British colonial coffee planters have in the main ignored the application of shade to the coffee tree. Without shade the tree certainly flourishes, but its full exposure to the sun, at any rate as the sun is wont to shine here, is detrimental in the long run to its most congenial state of productiveness. However, near the upper limit of this cultivation, namely, from 5,000 to 6,000 feet, shade is not to be recommended.

From the foregoing it will be seen that Colombia is making rapid strides in coffee cultivation, and the strides are so remarkable that it already produces about two-thirds as much coffee as all British colonies and possessions combined, and doubtless it will very soon overtake the total aggregate production of these colonies and possessions. When the vast productive tropical resources of the empire are borne in mind this seems anomalous. For example, the "Times," in a recent editorial, says with regard to the expansion of three of the great groups of colonies, not referring to the Eastern Empire:—"What is most remarkable about that growth is that it has already reached a point at which each of the groups exhibits the most extraordinary variety of climate, of produce, and of the conditions under which life may be lived." It is true that the production of this article in Ceylon has dwindled, owing to the fatal leaf disease, from 50,000 tons in 1871-75, to 3,750 tons in 1891. Though this disease has so seriously affected Ceylon and India, England possesses other eligible colonies exempt from the disease. For instance, in the New World, Jamaica may be mentioned as being capable of growing coffee on a very much larger scale than it does at present. There, however, during scores of years this product has remained almost stationary. Even compared with the neighbouring Republic of Hayti, the inhabitants of which are usually denounced for their aversion to progress, Jamaica comes out unfavourably, for Hayti, in spite, too, of revolutions, exports seven times more coffee than Jamaica.

As I am well acquainted with the productive resources of Jamaica, England's tropical American colony par excellence for coffee, it may not be amiss to give the following particulars touching coffee cultivation in that colony in comparison with the cultivation in Colombia. The total coffee production in Jamaica, about 10,000,000 lb., represents what is cultivated on an area of 11,000 acres in Colombia, but in Jamaica 22,476 acres are under cultivation. Thus, were the Jamaica plantations yielding to the same extent as those of Colombia the value of the output would be increased from 336,840*l.* to double that amount yearly. Moreover, the general average quality of the Colombian article is superior to that of Jamaica, though that island contains several plantations at high altitudes the produce of which is the finest in the world. There can be no doubt that the coffee industry of Jamaica would be greatly benefited by the adoption of the more advanced practical methods pursued in Colombia.

In a recent number of the "Kew Bulletin" reference is made to the slow development of the coffee enterprise in Jamaica and other British colonies. What that paper suggests in order to encourage the enterprise in Jamaica is the opening up of roads to facilitate transport, but Jamaica is already well provided with splendid roads; besides, the most eligible sites for plantations are nowhere situated more than some 20 miles from the sea, and seaports surround the island. I have already described how

remarkably different are the conditions of transport in Colombia, and how this, the most important commercial plant of tropical America, can be turned to better account in the colonies,

A glance at the following figures, which I have culled from the "*Ceylon Tropical Agriculturist*," &c., shows the relative position of the exports of the three great rival products—coffee, tea, and cacao, in the Old World and the New:—

Articles.	Quantity. Tropical America Tons.	Old World Tons.
Coffee	640,000	105,000
Tea	Partically nil	216,000
Cacao	42,000	1,600
Total	682,000	322,600

To the foregoing Old World returns China and Japan contribute to the extent of fully 100,000 tons of tea, so that the total exports from the British Eastern Empire, together with Java, &c., amount to but little more than 200,000 tons of coffee, tea, and cacao, whereas the total output of coffee and cacao from tropical America amounts to 682,000 tons, and the value of this is 50,000,000*l*.

Touching the cultural requirements of these three products, cacao, though from an alimentary point of view by far the most important, is placed at a great disadvantage, inasmuch as this plant is exclusively adapted to hot and humid tropical zones, conditions which have undoubtedly restricted its cultural extension. Tea is an extra tropical product, though it is cultivated with great success on the mountains of the tropics. The coffee plant, like cacao, is essentially tropical, but it is constitutionally adapted to a far wider range of climatic conditions, for it grows in the hottest valleys, up to the genial temperature experienced at elevations between 4,000 and 6,000 feet above sea-level. As to cacao, it may be assumed that if this tree were susceptible of cultivation over the wide climatal expanse on which tea grows, instead of being confined to purely tropical climes, its cultivation would have long since attained greatly enhanced proportions.

CACAO.

This is a favourite article of cultivation among the natives, cacao and the beverage is very largely consumed throughout the Republic. In most parts it is used, probably, to the same extent as tea is in England. Anyhow, it may be safely computed that its consumption by the 4,000,000 inhabitants of the country amounts to not less than 3 lb. per capitum per annum; thus a gross annual production of 12,000,000 lb. The number of trees requisite to yield this quantity may be estimated at about 12,000,000, *i.e.*, 1 lb per tree. And it may be mentioned that the number of trees thus indicated is considerably less than is under cultivation in the island of Trinidad. From a few districts of the Republic some hundreds of bales are exported, but it is notorious that, in spite of the illimitable resources of the country for the cultivation of this indigenous tree, the production falls short of the actual wants of domestic consumption. Were the plant more largely cultivated the internal consumption would be greatly increased, consequent on reduced prices, which are usually higher here than in Europe. Moreover, only recently several shipments of cacao have been imported from England, shipments transported at great cost to the interior of the country.

The explanation as to the abnormal position of this cultivation may be best indicated from the following extract of a letter of mine addressed to the President of the Republic, and published in the "Diario Official" of November 8, 1893:—

"I place this in the first class of the products which deserve the attention of the Government. The plant is indigenous here, and the article is one of general consumption in the Republic. Further, as an article intended for exportation, it is, in my opinion, more important than coffee. "Unfortunately, in many parts of the country the cultivation of it is found in a most lamentably degenerate condition. In a note on this, and other similar matters, published in the 'Diario Official' of November 7, 1887, I referred to an insidious disease which affected the cacao tree in various parts of the country. Many plants in other countries have been attacked from time to time by some disease, but without loss of time an investigation of the causes has been made. Here this industry is allowed to decay, and the country to suffer a loss of many thousands of dollars each year. In the document itself I pointed out as a likely means of combatting the evil the following:—"'In all probability the most systematic and efficacious remedy which could be adopted would be the renovation of all the plants by selecting foreign seeds, thus making impossible the reproduction of plants proceeding from diseased trees. Another effective remedy might be found in having recourse to the system of grafting healthy branches into the wild species of the cacao.'"

In continuation of this subject I made the following remarks in my former report, published by the Foreign Office in March, 1891:—"In two reports of mine, published by the Colombian Government, I strongly advocated the introduction of cacao seeds from Trinidad, with the view of ameliorating the degenerated plantations of the interior. The result of my excursion to the Sierra Nevada, as reviewed in this report, completely nullifies my former impressions as to the advisability of importing these seeds; now the conditions are reversed, the wild cacao being, par excellence, the kind for cultivation throughout the Republic. In those countries in which this product has become a staple the yield per tree hardly averages 1½ lb. With our wild cacao I feel sure that under careful cultivation that average can be doubled, though in making an estimate of returns I prefer to curtail this prospective average. The cacao planters of Tolima, where millions of pounds are cropped, annually obtain an average of little more than ½ lb. per tree. Hence the replanting of the degenerated fields of the interior, as well as the extension of this cultivation, with seeds from the Sierra Nevada, is a measure the importance of which cannot be overrated. Arrangements could be made for the acquisition of these seeds on a large scale."

In that report I also referred to the favourable conditions under which cacao flourishes in Trinidad, where this product is an important staple, and in making a comparison with these conditions, I summoned up—"How infinitely superior are the innumerable sites for plantations at the foot of the Sierra Nevada, sites which nature has disclosed." In this connection it should be mentioned that these favourable conditions are by no means confined to the district surrounding the Sierra Nevada (a system of mountains distinct from that of the Andes), that is to say, equally eligible lands abound in the great valleys at the feet of the Cordilleras of the Colombian Andes. Here thousands of square miles are most admirably adapted for the plant.

The disease affecting this cultivation is confined, as far as I am aware, to two provinces, namely to certain districts of Tolima and of Antioquias. Fortunately, though the disease is widely extended in Tolima, the southern confines of the department are in a great measure exempt from it. Yet attacks by parasitical insects are frequent sources of concern to the planter. In all probability the diseases to which this plant is subjected have been instigated by the injurious system of close planting resorted to, combined with the excessive shade imparted by an overgrowth of trees planted for shading the cacao.

In the south of Tolima, it is interesting to note, this cultivation is pursued on a considerable scale and with great success, under the influence of irrigation. The region in question is characterised by prolonged droughts, and the application of irrigation has thus proved most advantageous. Cacao thus produced has become quite an important industry. Planters in British colonies will be glad to learn that the plant is amenable to systematic irrigation, a condition that assures the extensive cultivation of the plant in comparatively dry regions, for excessively humid conditions of climate have been deemed indispensably requisite for the plant.

TOBACCO.

This is a very important industry in Tolima, and it affords employment to many thousands of the peasantry, for the cultivation of the article entails incessant care and attention, and its subsequent manipulation, from the preparation of the crude product to the manufacture of cigars involves exceptional conditions of labour. Women and children are largely employed in the manufacture of cigars. The best cigars are sent to Bogota and other large towns. The price of these averages from 2 to 5 c. each (Colombian currency). There is comparatively little difference in the quality and aroma among these cigars. The higher priced kinds are the produce of the most carefully cured and best formed leaves. In point of quality, it is worthy of remark, there is a much wider range in this respect than is the case in the Jamaica cigars, which are no doubt superior, and this is a new industry in that colony. Among the common classes of people in Tolima a very inferior ill-made cigar is extensively smoked. These are sold in the districts in which tobacco is cultivated at the rate of some 30 for 1 real (about 2*d*.).

This cultivation in Tolima formerly occupied a much more important position than it now does. The great falling-off in cultivation is the result of a disastrous disease which attacked the plant about a score years ago. The cause of this disease has been attributed to the unintermitted reproduction of the article on the same land. The plant is now generally cultivated in small patches, so that the effects of the disease is neutralised.

Anterior to the appearance of the disease, Tolima was the chief tobacco-producing centre of the Republic, now the quantity exported from Tolima is insignificant. At present the principal seat of this industry is occupied by the Department of Bolivar, which furnishes 50 per cent. of the total exportation from the country.

20 years ago the total quantity of tobacco exported from the country was somewhat higher than at present, then it was about 4,000 tons, valued at 2,500,000 dol. In 1891 it was 3,840 tons, valued at 1,480,000 dol.

Agriculture in general in the tropics is carried on in a rough and primitive fashion, weeding the fields constitutes the one dominant element inseparable from the cultivation of most products, that is to say, weeds grow apace in such a way that agriculturists unacquainted with the tropics are total unable to form the slightest conception of their rapid and irrepressible growth. Moreover, the system of weeding pursued is commonly performed in a most perfunctory manner. The conditions of climate are, of course, not conductive to painstaking efforts on the part of the peasantry. This is the kind of treatment usually accorded to most agricultural products in tropical America. These is, however, one notable exception to this rule; I refer to the cultivation of tobacco. It is a delicate plant, and easily overpowered with weeds and with insects, so that careful cultivation is indispensable. A tobacco plantation is, therefore, cultivated like a garden. Peasantry employed in this cultivation necessarily become trained to superior methods of cultivation. There can, therefore, be little doubt that a Government that fosters tobacco cultivation in tropical America fosters a genuine predilection for improved husbandry on the part of the agricultural labourer,

CINCHONA.

There is but little interest nowadays attaching to cinchona cultivation, but the following brief remarks may prove interesting:—

Several species are indigenous to this department, and prior to the great reduction in the price of quinine—a reduction from about 10*s*. per oz. to 8*d*. —large quantities of bark of excellent quality were exported from this department.

Cultivation was started in various parts of Tolima over a dozen years ago, when barks still fetched a high price, but coincident with the marked decline in prices the plantations were abandoned. The largest and most important was established under my superintendence; some 400,000 trees, comprising the best species, were thus established at an elevation of from 6,000 to 8,000 feet above sea-level. Though abandoned for several years, a large proportion of the trees are growing, and as they assume larger dimensions will be turned to account some day. Seeds of the more important species grown in the east were obtained and planted to a considerable extent, thus, *C. succirubra*, *C. Calisaya*, *var. Ledgeriana*, and *C. officinalis*. These species flourished here, but, after half-a-dozen years of cultivation, one of them, viz., *C. officinalis*, began to show symptoms of what is denominated "canker," an insidious disease, and large numbers have since succumbed. This is exactly what occurred with regard to this species in the Jamaica cinchona plantations, which I also inaugurated.

Besides the above-mentioned species, several indigenous species were planted on a large scale, and these proved the most important, as will be seen from the analysis given below, which analysis was made by Mr. David Howard, of the well-known firm of quinine manufacturers.

A detailed account of the Colombian species was given at a meeting of the Pharmaceutical Society, in London, in April, 1892, by Mr. Holmes, the curator, and it may be here added that gentleman then stated in regard to one of these varieties, viz., *Tuna*, "Probably the richest known in the percentage of quinine." The result of the analysis shows remarkable average richness:—

	Quinine Sulphate.	Quinine.	Cin-chonidine.	Cinchonine.	Quinidine.	Amorphous.
Thomsoniana ...	5·94	4·45	0.27	0·82	0·26	0·74
Ledger, verde ...	4·90	3·68	..	0 01	0·20	0·44
Negra ...	7·30	5·48	..	0·10	Trace	0·78
Morada ...	3·06	2·30	..	0·04	0·50	0 38
Tuna ...	9·04	6 78	0·40	0·38	0·18	0·42
Pombiana ..	5·88	4·41	0·34	0 02	Trace	0·22
Officinalis ..	6·32	4·47	1·23	0·10	0·07	0·46
Succirubra ..	5·93	4·45	2·77	0·12	0·02	0·32
Hybrid ..	3·32	2·49	1·92	0·04	Trace	0·56

INDIA-RUBBER.

A very important species of rubber is indigenous and I am inclined to think peculiar to Tolima Unlike other important kinds of rubber, it grows at high elevations, viz., at from 6,000 to 8,000 feet above sea-level. Some thousands of bales of it were exported a dozen years ago. But as the tree was only locally distributed, the source of supply was soon exhausted. The authorities at Kew have named this plant *Sapium biglandulosum*, a species which is also said to be found in British Guiana, where, however, it seems to be of no value as a rubber producer,

In connection with the cinchona plantations above referred to, a plantation of this rubber was made about 10 years ago. The tress grew with remarkable rapidity, with trunks a foot in diameter in six years; but this plantation shared the same fact as the cinchona, that is, it was abandoned years ago because the cinchona was abandoned. With renewed attention, however, this plantation may still be made important.

A few years ago I directed the attention of the Secretary of State for India to the advisability of cultivating this plant on a large scale in that country. My letter was referred to the Government of India. I think, however, that no progress has been made. This valuable plant could be cultivated over a wide range of latitude in India, thus extending from the elevated mountainous regions of Southern India to the low-lying valleys of the Himalaya as far as 26° north latitude. And this is a great advantage as compared with the limited zone in which the other important tropical American species of rubber introduced to India can be cultivated.

DEEP DIGGING FOR COFFEE.

A Correspondent in South Coorg writes to a Madras paper: The change that is worked in a sick piece of coffee by a deep digging is little short of marvellous; in a couple of weeks' time one would hardly know it for the same piece of coffee. Any-one has only to try it to be convinced of the fact. It seems strange under the circumstances that the important work of digging should in any case be neglected; and yet I have heard of its discontinuance being advocated, and of this being put partially into practice in several places. The argument used in favour of discontinuing digging is that it was very seldom done in the Spicy Isle, and yet crops used to be large. It would be well to call to mind, when using argument of this description, that almost all the coffee in that delectable land has gone out. It has also got to be remembered that soils differ and that work suited to one description of soil would be quite unsuited to another. In Coorg, for instance, digging is not generally so necessary in the open friable forest soils as it is in the Bamboo; although even there it would have been beneficial in all cases where the slope of the land admitted of its being carried out without the risk of loss of soil through wash. The result of stopping digging for a couple of seasons in the Bamboo or the Santikoppa District would cause such a rough awakening that I am sure it would never be attempted again; the lesson learned would be too severe to be easily forgotten. I may mention that the increase in borer alone would be starling; although it is as likely as not to be attributed to this cause. The following brief extract from Professor Johnston, although referring more particularly to the plough, is equally applicable to the fork, will afford some reasons as to why digging should naturally be beneficial. "By the use of the plough tho parts of the land are more minutely divided—the air gets access to every particle—it is rendered lighter, more open, more permeable to the roots. The vegetable matter it contains decomposes more rapidly by a constant turning of the soil, so that whatever the fibres of the roots penetrate they find organic food provided for them, and an abundant supply of oxygen of the atmosphere to aid in preparing it. All soils contain, likewise, an admixture of fragments of the minerals of which they are formed, and which, by their decay, yield new supplies of inorganic food to the growing plant. The more frequently they are exposed to the air, the more rapidly do these fragments crumble away and decompose. There are few soils so stubborn as not to show themselves grateful in proportion to the amount of this kind of labour that may be bestowed on them. I might make many quotations from other authorities in support of the beneficial action of digging, but the above ought to suffice to convince any sceptic. In the case of the estates above referred to, it is the practice to place the manure on the surface of the hard ground near the stems of the trees, the idea being that it all sinks into the ground and that none of it is lost. This may look very well in theory, but in practice a two-fold loss is entailed on the manure, one by the wash and the other by the escape of the organic part as gas into the air, and I am sure that if the quantity of manure used were not large, the results would be very evenescent. One bad result of putting down manure in this way is that the stems of the trees throw roots into it above the surface of the ground, and these become exposed if any part of the manure is washed away; or they are injured if a coolie is careless with his mamooty in scraping weeds or digging; so that here also, as far as the trees are concerned, there is a further waste of manure. When the roots are injured they are deprived of the only means of taking in the manure just when they had begun to do so, Dr. Voelcker had said that it does harm to go upon the land when it is wet evidently because this tends to make it hard and compact. But how is going upon the land when it is wet to be avoided? The seasonable performance of the different works entails going upon the land often when it is very wet. The only way to counteract the bad effects of this is to fork and stir the soil several times if feasible. But here the planter is exercised by the fear that this would cause too much root disturbance. So long as the roots are not turned up and exposed, I believe no harm results. The fork should be inserted deeply near the big trees and the soil be prised up. Even if some tearing of roots results, the injury is slight and is more than compensated for. This cannot be done in the case of young plants as they are apt to be lifted. In this connection the following will be of interest. Thus Mr. Phillips in "Principles of (Tropical) Agriculture":—"Mr. Mills is known as the grower of some of the finest pines ever seen, and the secret of his method is thus characterised in the *Gardeners' Chronicle*:—'The foundation of his success is common sense. He keeps his soil perfectly open and well drained; his roots are preserved by this means in a healthy condition; he does not cramp them. These are his great rules of conduct. They apply to other plants as well as pines."—*Indian Agriculturist.*

THE CEDAR OF CENTRAL AFRICA.

In Commissioner Johnston's report of the first three years administration of the eastern portion of British Central Africa there is a sketch-map showing the agricultural condition of this country and the extent of such forests as yet remain. Mr. Johnston says:—The dense forests are now mainly confined to certain hilly regions, where local circumstances protect them to some extent from destruction by bush-fires. They are always associated also with either an unusual rain-supply or the presence of underground springs. Slightly stagnant or surface water appears to contain too many salts in solution to be favourable to tho growth of forest, and such forests as are usually found growing near swampy districts are palm thickets. There is one magnificent forest of raphia palms—one of the grandest sights I have ever seen in the vegetable world—near Jumbe's town, Kota-Kota, in the valley of a sluggish stream flowing into the Bua. As a remarkable feature peculiar to British Central Africa should be noted the splendid cedar forests on the upper plateau of Mlanje. Under the explorations of Mr. Alexander Whyte, the naturalist attached to my administration, it was not known that any conifer existed in Central Africa, south of Abyssinia, and north of the Drakensberg, with the exception of a few small juniper bushes discovered by Mr. Thompson growing on Mount Kenia and one or two other heights in Equatorial Africa. The existence of conifers on the top of Mlanje was first reported by the Rev. Robert Clelland, a missionary belonging to the Church of Scotland Mission. Not much heed was given, however, to this news, because no specimens were sent home for identification. But, undoubtedly, Mr. Clelland's information put us on the scent, and one of the first things I attempted on arriving here in 1891 was to have the upper plateau of Mlanje explored. As a consequence, Mr. Whyte discovered the grand conifer, of the genus Widdringtonia, to which his name was given. An account of this tree and tho circumstances of finding it were given in an earlier report of mine printed by the Foreign Office. This Widdringtonia would appear to be nearest allied to the cypresses, as it unquestionably is by the shape of its seed vessels, and the nature of its foliage; at the same time, it is widely different to the cypresses in shape and size, and far more resembles the cedar, both in appearance and in the fragrant smell of its timber. It would seem now as though thero were two different species of Widdringtonia growing on Mlanje, one a very lofty tree, reaching fully to 150 ft. in height, and the other scarcely exceeding 30 or 40 ft., and growing in a very straggling habit. There is a slight difference in the foliage of the two species. We have not yet been able to get tho dwarf species edentified, but hope to do so before long. In regard to this Widdringtonia, I might mention that Mr. Whyto has sparod no efforts to introduce, or let us say, re-introduce its growth into all parts of the Shire highlands above

3,000 ft. in altitude. The tree would appear to flourish at a relatively low altitude, inasmuch as those planted in the grounds at Zomba, below the Residency, at an altitude not exceeding 2,900 ft. above the sea, leave nothing to be desired as regards their vigour of growth, some of the young seedlings having attained a height of 5 ft. in two years. Mr. Sharpe believes that he has seen a Widdringtonia growing on one or two of the more inaccessible peaks of Zomba, and, judging from what I could see through a field-glass, I think he is right in his opinion. Nowhere else, however, throughout British Central Africa, or in the adjoining regions, has any one reported the existence of this conifer. Baron von Eltz has made an active search over the lofty Livingstonia Mountains, at the north end of the lake, but has failed to find anything of the kind.

As an example of the rapid application to practical usefulness to which we have put this discovery of Mr. Whyte's, I may mention that, whereas the definite existence of the tree was only first made known in October 1891, in June 1893. Captain Johnson, commanding the Indian troops at Mlanje, was having the dead trees sawn up into logs, which were being sold to advantage in Blantyre, and later on, in the autumn of 1893, enough cedarwood was supplied from Mlanje to re-roof the whole of the Residency and its attendant buildings at Zomba, besides which a great many useful articles of furniture have been made of the wood.—*Timber Trades Journal.*

PRODUCTS OF BOLIVIA.

This mountainous country has great natural wealth. It is rich in the precious metals and has large stores of copper and tin. Lack of transportations facilities prevents free export of the natural products, other than high-grade minerals and cocoa.

"The torrid region extends from the low tropical plains and valleys of eastern Bolivia to an altitude of approximately 6,500 feet above the sea. It abounds in every variety of tropical fruits, includgranadillas, pepinos, paltas, pacaes, a fruit of the genus *Inga*, consisting of thick pods about six inches long filled with a sweet, refreshing, white pulp; chirimoyas, a species of *anona*, one of the most highly prized of the Bolivian fruits; pine-apples, those of the province of Yungas being especially rich and fragrant; sugar cane, coffee, rice, a superior quality of white and yellow cotton, cocoa (erythroxylon coca), the dried leaves of which are a highly stimulating narcotic and are chewed by the Bolivian and Peruvian Indians, by travelers in the Upper Andes, and by the Bolivian soldiers, when in the field, just as betel is used by the inhabitants of the East Indies, cacao or chocolate tree, a species of *theobroma*, found also in the West Indies, which bears a pulpy fruit from the seeds of which chocolate is made. One of the peculiar productions of this zone is the guayacu tree from which is gathered a fruit containing a rich aromatic flour or powder neatly inclosed in a strong box-shaped cover or shell and esteemed more for its rich perfume than for food. It is known only by the name given it by the Aymara Indians, viz, *háku guayácca*. *háku* in the Aymara tongue, meaning flour and *guayácca*, box; hence 'flour box' or 'box of flour.' The guayacca is perhaps the tallest tree of Bolivia, growing to the height of about 125 feet, with dense foilage and wide-spreading branches, thus making it one of the most delightful shade trees known to the montaña. This region also abounds in forest of ebony, mahogany, rosewood, satin wood, cedar, wax, and cork trees, palms, rubber trees (caoutchouc), and other varieties of wood of great beauty and value rarely met with in other countries, including a species of mulberry from the bark of which are made the curious shirts worn by certain tribes of the Bolivian Indians. Among the medicinal and other plants are cinchona, jalap, matico, sarsaparilla, copaiba, tamarind, palma-Christi, ipecacuanha, camphor, gum arabic, balsams, valerian, cinnamon and vanilla.—*American Grocer.*

SOME QUEER FOODS.

There is an old proverb to the effect that what is food to one man is poison to another, and the proverb is well illustrated at the department of agriculture at Washington, by an odd sort of exhibit of queer foods eaten by out-of-the-way people. Among the articles in the exhibit is a loft of bread made from the leaves of a plant that is allied to the century plant, as also another kind of bread from a dough of juniper berries. These are relished by some kinds of Indians, while others make cakes out of different kinds of bulbs. The prairie Indians like a dish of wild turnips, and the "screw beans," which grow on mosquito bushes, are utilized by Indians for food. Soap berries furnish an agreeable diet for some tribes.

The Digger Indians in California do not disdain the seeds of salt grass, and the seeds of gourds are consumed in the shape of a mush by Indians in Arizona. The exhibit in question includes a jar of pulverised crickets, which are eaten in that form by Indians of Oregon. They are roasted, as are also grasshoppers. These delicacies are cooked in a pit, being arranged in alternate layers with hot stones. After being thus prepared they are dried and ground to powder. They are mixed with pounded acorns or berries, the flour made in this way being kneaded into cakes and dried in the sun.—*Rio News.*

A RETROSPECT.

We suppose it will be at least an orthodox, if not an interesting proceeding, if, in this our first number, we devote a small space to looking behind us, and trying to recall from out the fast receding years, a few facts as to the beginings of the planting industry in the days when B. C. A., as we now know it, was still a vision of the future.

We need not here go over the story of the discovery of this part of the world by Livingstone in 1855 and it will be sufficient to note that it was in 1875 that the late Henry Henderson fixed on the site of the Blantyre Mission, a selection showing a judgment and knowledge, which has not since been equalled. It was one year later before the first mission party arrived among them Mr. John Buchanan. In 1878 Mr. Jonathan Duncan arrived bringing the now historic coffee-plant and in the same year Messrs. John and Fred Moir established themselves at Mandala. At the end of three years the maiden crop of the first coffee-plants was sown and the plants distributed, part being planted out at Blantyre, part sold to the A. L. C. and planted at Mandala, and part being sent to Zomba. The second year's crop was also sown and distributed and thus a beginning was made in coffee-planting.

In 1881 Mr. Buchanan started for himself at Mlungusi (below the Zomba Mission site) and put the question to a practical test as to whether coffee-planting would be a commercial success. Although many years, with varying vicissitudes, have passed since then we do not suppose. Mr. Buchanan would now materially alter the opinions he then formed and enunciated in his book "The Shire Highlands." In the light of present day experiences it is interesting to reread the verdict passed on the first sample of coffee from East Central Africa (Zomba district) placed before a London broker

"The following is the report of Messrs. Patry and Pasteur, coffee-brokers, London:—

"The coffee particularly is remarkable for the depth and brightness of its colour, which gives to it a value probably much greater as a fancy coffee suitable for certain foreign markets, than it would possess merely from its strength when roasted; and it compares favourably, for appearance, with the products of European plantations in British India, Ceylon, and Java. It is, however, a rather soft coffee, and not likely to keep its fine colour very long.

"Indeed some of the berries are already getting a little faded, which, if it made further progress, would soon detract a good deal from its value in its present state. In all other respects the coffee is as

well prepared as possible; it is large, well picked, and very clean-looking, smooth and even, and of bright, deep blush-green colour, and worth in this market about 85s. per cwt. in bond."

In connection with the preparation of the above sample, I am, in justice to it, entitled to state, that I had had no experience whatever in preparing coffee prior to my sending away the sample."

As this is merely an outline we are not able to go into the details of Mr. Buchanan's efforts in sugar planting in which he was ably seconded by his brother David Buchanan, who joined him in 1883, nor to relate how he made a wooden cane crushing mill and afterwards a wooden waterwheel, but we note that in 1885 he was able to write as follows:—

"There are now growing in the Blantyre garden orange, lemon, fig, pomegranate, peach, loquat, guava, apricot, nectarine, custard-apple, granadillas, and several others."

From 1885 onward was the period of the Arab war and Portuguese complications and the records of these years are chiefly in the archives of the Foreign Office. In 1887 it was, we think, that Mr. Sharpe came into the country elephant-hunting, which however had to be exchanged for the more serious business of fighting the Arabs, a work in which the late Mr. L. M. Fotheringham had his full share. In 1888 the *Blantyre Mission Supplement*" was first published and a few stray notes here and there help us to follow the progress of events. It was in the same year that the present writer came into the country. At that time one could almost count the Europeans engaged in planting or trade on the fingers of one's hand and the chief stations were Blantyre and Mandala, Chirazulo, Zomba and Domasi. Mr Robert Buchanan, who came out in 1885, was at that time in charge of Zomba.

In 1888 both Messrs. Lindsay and Smil'ie had been sometime in the country and Mr. Simpson was on she lower river. In March on the same year we read that "the Brothers Pettitt are still holding their own in the country. Mr Pettitt and Mr. Marshall are on their road to Quilimane in the course of their trade" and in May we hear of Mr. Steblecki's arrival.

In December the *Supplement* reports Mr. Sharrer as "being on his way up" and having brought his streamer as far as Katunga's filled with his trade goods and two months later a note is made of the purchase of the site of his present head-quarters from Kapeni.

In April 1889 the following paragraph marks the progress of the Mission agriculture:—

"The Mission tea bushes are doing extremely well; the gums have seeded, and we have now plants from them; Mocha coffee is sown and springing oranges are maturing, and there has been a supply of vegetables for some time past."

With regard to "outsiders" we read:—

"Coffee seems to be doing well this year. The Mission patch shows some light berry in one small part but not so wide spread as last year. The acres of the Buchanan Bros. in the Michiru valley are perfect; level symmetry, lovely green and laden shoots have transformed the rough bush into a fairy land. The plants are all young and of the same age, so there is neither lightness in berry, borer in stem, nor irregularity in the rows.

Mandala coffee, much older and of course more tried, is doing well."

In October 1889 our present Commissioner passed up to the North End (of Nyasa) on his mission of peace and shortly after the country was declared a British Protectorate.

In 1889-90 the late Mr. Robert Cleland was frequently at Mlanje arranging for the opening of his station there and we well remember with what enthusiasm he spoke of the soil, the forest, the rainfall, and the general suitability of the place for coffee. During one of his visits he made a determined attempt to reach the highest point of Mlanje but failed, and he was the first to discover the well known Mlanje pine.

Mr. Duncan started his present estate at Upper Mudi early in 1890 and in July of the same year we read of a great storm of hail passing over Blantyre. "The hail was worse than we have ever seen here before. It lay for days after and the natives gathered it in basketfuls."

In 1891 there are several arrivals. Mr. Bradshaw passed up the river and settled at Mlanje where Mr. Brown of Ceylon had preceded him. Mr. Brown opened up for the A. L. C. what is now Mr. Moir's Lauderdale Estate. Mr. Hastings also arrived and took up land at Chiradzulo while numerous other purchases were completed and ratified. Mr. Adamson, now at Cholo, arrived shortly after Mr. Hastings.

The *Supplement* has a doleful note in April of that year—"Coffee is being planted in all directions..........Coffee plants have been unable hitherto to hold out above four or five years." The same note is struck in September 1892, at the time of Dr. Johnston's visit, but we notice that these views are contradicted in their issue for June of the present year where despondent planters are told to take a "little heartening" seeing that the pioneer patch of coffee in the Mission garden, which is fourteen years old, is "as flourishing as ever"

In August 1891 it records the aim of "The Buchanan Bros." to reach the number of 1,000.000 coffee plants that season.

"This sounds well and is no empty sound, for even the empty berry foe seems to be succumbing to treatment, as did the borer and leaf-scale. The highest price quoted is we believe this very Shire Highland coffee—we want some good name for it —the quotation being 112s.

"Mr. Sharrer's plantation's are said to have laid more ground, than any one else, under cultivation."

But it is time to stop as we are now, so to speak, on the very borders of the present regime, seeing that our Commissioner arrived in July 1891 by the Chinde mouth, and the history of the last four years must be tolerably familiar to most of us and if not, is it not written in the recently issued Blue-book? to which we refer those desirous of acquiring the latest information.—*Central African Planter.*

COTTON, COFFEE, AND VANILLA CULTURE IN TAHITI. —Referring to the cultural industries of Tahiti, the British Consul states that Cotton has always been the favourite culture of the native population, but owing to the extremely low prices that have latterly ruled, both locally and in Europe, its cultivation is being gradually abandoned. Tahiti Cotton no longer pays to produce, and it would be an excellent thing for the island and for some of its dependencies if the natives could be induced to undertake in its place the culture of Coffee, which grows in the island under the most favourable circumstances. The quality has been declared by European and American experts in Liverpool and New York respectively to equal West Central American in aroma and in general quality. Coffee would be the ideal culture for the natives, but so far only a few of them have been induced to set out small patches, for the reason that as they only live for to-day, they cannot as yet be persuaded to undertake an enterprise from which a return can only be expected after the first three years. The one attempt made by any foreigner in this direction—a small plantation of seven acres, planted some three years ago—shows conclusively that this enterprise could be made to pay. The annual production of Coffee is at present 3 to 4 tons only. The cultivation and curing of Vanilla in Tahiti is being neglected in consequence of the inferior quality as compared with that of Mexico, Bourbon, and Seychelles, and the corresponding low price that it commands. A hope, however, is current in the island that the market value may be increased by the adoption of a more efficient method of curing the bean than that at present in use. The annual export of Vanilla is about 15 tons.—*Gardeners' Chronicle.*

THE LABOUR QUESTION.

We direct attention to two letters elsewhere from men of planting experience and long residence, writing the one from a Kandy, and the other an Uva, district. Both deprecate any appeal to Government for legislation to render monthly payments compulsory, and we think the parent Association will be very slow to accept a proposal of the kind until they see a good deal further into its working and consequences. These "consequences" are depicted by a contemporary after a graver fashion than is attempted even by the planters themselves, and we quote the following for the purpose of asking how far actual experience bears out the several anticipations of evil results all round :—

If the cooly's wages are paid into his own hand at the end of every month, it will be a good thing for him, but probably his creditors will see very little of this same pay, and either the debtor must go through the bankruptcy court and get a clean slate to begin again with, or else his creditors, including the estate proprietor, must face the loss of large sums of money in the shape of bad debts written off. This arrangement would, no doubt, be a splendid thing for the cangany, who, in spite of what is said about him, is often a distinct genus from the ordinary cooly, having inherited the gang that works under him, with his father's possessions and liabilities, and being a somewhat important personage in his way, more intelligent and unscrupulous than the cooly-cangany who has worked all his life in the field and has been merely promoted by the favour of his master. The former receives large sums of money from time to time, which are spent in other methods than advances to the humble cooly on the coast, and are often utilized for money-lending purposes and in the purchase of real estate. If the cangany is to get a release from these debts, simply because the coolies under him are unable to bear the burden of their indebtedness to the cangany, the latter will undoubtedly score all round, and we do not see how distinctions are to be made between one class of debts and another, or how the debt which has been rightly incurred is to be separated from that for which the debt r is not really responsible, and which he has never benefitted by in the slightest degree.

Now, while the writer of the pamphlet only makes mention of one friend who has for a considerable time practised "monthly payments" with the utmost satisfaction, there must surely be several other planters throughout the planting districts, who have had experience of the system. At the time when Sir Arthur Gordon wished very much to legislate in this direction, he had —if we remember rightly—a leading Dimbula planter and a well-known group of estates in Matale to refer to, in support of the case for "monthly payments." Now, in a matter of this kind, a single fact is worth a bushel of theories. Will the gentlemen who have actually carried on "monthly payments" for it may be half-a-dozen years, tell us exactly their experience. How have their Canganies got on about the old debts ; how about security for Coast advances ; how about hereditary claims ? We do not say that even if the answers should be satisfactory, the time is ripe for compulsory legislation. The case is one to which *Festina lente* pre-eminently applies. But if we have all the advantages, as realised in actual practice, related to us by those who are making monthly payments, and perhaps the drawbacks noted by observing neighbours who have watched the working of the new system, we are far more likely to arrive at safe conclusions than if we go merely speculating about consequences, without taking note of actual experience.

THE ELK HILL COFFEE ESTATES COMPANY.

The Elk Hill Coffee Estates and Land Exploration Company, Ld., of which we published the prospectus a few days ago, is a company formed with a capital of £100,000 in shares of £1 each to take over as a going concern the coffee estates and business of Mr. James Chisholm, a well-known and successful coffee planter in Mysore. The prospectus states that the books of the firm covering a period of ten years have been submitted to a prominent firm of chartered accountants in London, and the result of their examination shows an annual average profit of £7,703. On the Board of the Company are two late Commissioners, Colonel Henderson, C.S.I., and General Cole, who are well acquainted with the district and have visited it in their official capacity. The profits of the concern on the basis of ten years' working would be equal to the payment of 6 per cent. interest on the intended issue of £32,000 of cumulative preference share, and 10 per cent. on £50,000 of ordinary shares. The Indian Agents of the Company are the firm of Messrs. Pierce, Leslie and Co., well-known in Southern India, and the vendor and his friends take payment of a large portion of the purchase money in ordinary shares. The prospectus provides for the way in which intending subscribers in India should apply. The bulk of the Indian tea companies' capital on the Bengal side has been subscribed in England, and this seem to be an effort to apply the same principle to coffee, giving Indian subscribers an opportunity of investments also.—*Times of India.*

BENGAL CINCHONA PLANTATIONS.

Dr. King's report on the Bengal Cinchona plantations for the past year is, as usually, a most satisfactory record. The scope of operations was much extended owing to the purchase of the Lebong plantation from the Bhutan Cinchona Association, from which 203,000 trees (all quinine yielders) were cut down. Altogether 295,500 trees were uprooted for their bark, in addition to those from the Lebong plantation ; the greater number of which were, however, feeble plants. The year's cropping reduced the number of trees to 3,277,000, but as there are still 650,000 trees growing on the Lebong property, the total number of living trees belonging to the Bengal Government at the end of the official year was 3,927,501 in permanent plantations and 20,000 in nursery beds. It is satisfactory to note that the demand for quinine, owing to the success of the pice-packet system, has increased. It is therefore intended, in view of a further increase in the demand, to plant out during each year an area in excess of that uprooted during the previous one. The year's crop yielded over 500,000 pounds of bark, the bulk of which was of the quinine-producing kind. The whole crop, with the exception of about 2,000 pounds sold independently, was made over to the Government Cinchona Factory. There was a slilt falling off in the issue of cinchona febrifuge as compared with 1893-94, due mostly to a decrease in indents from the Government Medical Depôts at Calcutta and Mian Meer. Considering the low rate to which the price of quinine has fallen during recent years, and the still lower level to which the prices of cinchonidine and cinchonine have been reduced, says Dr. King, a diminution in the demand for cinchona febrifuge was inevitable. The diminution has, however, been more gradual than was anticipated,

and the fact that during the past year the cash sales were reduced by only 37 pounds, Dr. King regards as a most satisfactory evidence of the public belief in the efficacy of this drug as a cure for fever. He notes that both cinchonidine and cinchonine have during the past year been pressed on Indian buyers at very low rates by European quinine makers who, obliged by the tests of the pharmacopœia, to remove these alkaloids from their quinine, can find no market for them in Europe. The expenditure on the plantations and factory during the year amounted to R1,23,805, including the instalment of R50,000 paid towards the purchase of the Lebong plantation. The net result of the year's working was a surplus of R7,705, which, however, can hardly be regarded in the light of a profit, as the plantation from which a certain number of trees has been taken has not been increased by a corresponding number. Dr. King pays a high tribute of praise to the work done by Mr. J. A. Gammie who was in executive charge of both the plantation and the factory. Messrs. Pantling, Parkes and Hartless, the three assistants, are also favourably mentioned —*Indian Daily News.*

TEA REPORT FROM NATAL.

Mr. G. W. Drummond, Kearsney Estates, writes us:—It seems likely that the new tea season will commence about the 23rd inst. The tremendously long drought we have had has, of course, had its effect on the backwardness of the young shoots. Our estimate for the Stranger district is 830,000 lb., out of which we hope to make at this factory 540,000 lb. and the total crop of the colony should be about 950,000 lb. If we get the favourable weather we got last year the estimate will be reached without a doubt, and probably exceeded. I have found that many people, most people in fact, who make Natal tea, give it exactly the same time to infuse as Indian or Ceylon tea. This is a mistake. Many a cup of Natal tea is spoilt by this mistake. Natal tea should be allowed to stand in fresh water, first boil, for fully three minutes longer than Indian tea, and two minutes longer than Ceylon tea. It is a tea that can be drunk by itself (pure)—no mixing—and has not the astringency of Indian tea, nor does it contain the same amount of tannic acid, which last is not wanted, and should not be allowed to find its way into the cup. Indian tea, 5 minutes; Ceylon, 6 minutes; Natal, 8 minutes.—*Natal Mercury*, Sept. 27.

TALIPOT PALM.

There is a fine talipot palm in flower above Mirigama on the right side of line from Colombo coming up.—*Cor.*

THE RUANWELLE TEA CO., LTD.

Application has been made by Messrs. F. J. and R. F. de Saram, Proctors, for the incorporation of the above Company with a nominal capital of R750,000 divided into 7,500 shares of R100 each. The subscribers to the Memorandum and Articles of Association are Messrs. A. Melville White, T. J. Anderson, G. W. Carlyon, C. E. H. Symons, G. H. Alston, C. J. Donald, and C. A. Leechman; the first Directors being Messrs. A. Melville White, Eric S. Anderson and G. W. Carlyon, and the Agents and Secretaries, Messrs. Whittall & Co.

Return from Tea.—With reference to an advertisement of Kitulgala estate in Maskeliya, it is remarked to us that "a return of R3,000 a year off 40 acres tea is not bad, seeing the leaf is sold." Very good we should say.

ELECTRICAL DEVELOPMENTS.

The new "*Non-polarising Electric Battery*":—otherwise, "the *new Voltaic Battery*," are names which do not convey much to the minds of the ordinary reader not familiar with the details of up-to-date electrical science, with its barbarous nomenclature of "Volts, Webers, Ohms, Ampires," &c. But when told what work the new battery will do, at what cost, and in how convenient a manner,—provided these shew a great advance—all can understand that another great discovery has been made, affording "Light" and even "Power" from a cheap and simple source. In writing on the possible achievements of science, a short while ago, we ventured to say that a time would come when all the potentialities contained in a small lump of coal would be made available in some new form of battery. Well, recent discoveries, apparently, go very near to the realization of our prognostications. If we could accept all that is mentioned in the paper before us, the new battery for lighting purposes, seems to afford facilities unobtainable hitherto. For a sum of about £50—we are informed—an installation can be had for any factory or residence, whidh will run for 200 consecutive hours, against a hitherto possible maximum of 10 hours by any other battery doing the same work, at the same cost. No engines, dynamos, or accumulators are required—only a floor space of 4 ft. by 21 inches and 3 ft. in height. As a motor, it is stated that it will not be found to be of much use until it can be made to develope more power.

Unfortunately, at the same time, we are told independently by a Colombo householder, for whom a friend at home has been interesting himself in this "Non-Polarising Battery" that it has by no means been fully and practically developed yet. He has been watching it since February last, but so far without being able to recommend it.—Still another circular placed before us has reference to the "Boron Carbon Battery" mentioned in the *Chemical News* which says:—

"The conclusion of the all-too-brief description states that the new cells are unrivalled as a lighting agent for lamps and give off no fumes, whilst one usually suffices to drive a motor, and three for the entire electro-chemical work of a large laboratory."

Verily, in the variety of candidates for further favour, there is a difficulty of choice. We must just allow the rivals to shew what they can do in the old country before trying them out here. But we are doubtless on the threshold of further discoveries which will afford us cheaper and greater "power" as well as more brilliant "light," and by the same safe, easy and inexpensive means.

Since writing the above, there comes from a correspondent, the latest story in lighting:—

"The Municipal Council of Paris has lately invited the Administration to study the practical means of lighting with 'Acetylene.' A mixture of 4 oz. of marble lime and 2½ oz. of coal of sugar submitted during 20 minutes to a heat of 3,500 to 4,000° celtins, gives 4 oz. of black crystals of 'carbure of Calcium.' Put in contact with water this decomposes immediately in giving gas bubbles, the 'acetyleno,' which has a lighting power twelve times greater than gas. 2 kilos. 85 of carburo of calcium in 40 kilos. of water produce one cubic metre of acetylene. A manufacturer of aluminium of spray (North Carolina U.S.A.) is said to produce the carburo of calcium at £3 por ton of 908 kilos. At that price, taking into account its greater lighting power, acetylene will be ten to twelve times cheaper than ordinary gas. One may

foresee that lamps will be made in the recipient of which, in place of oil, a lump of acetylene will be placed in the water; this would be the downfall of kerosene and gas, as well as of electric light?"

SOME RECOLLECTIONS OF EARLY DAYS IN CEYLON.

[BY MR. R. E. LEWIS—A PIONEER PLANTER IN THE EARLY "FORTIES" AND AFTERWARDS COLOMBO MERCHANT.]

The writer's recollections commence in

THE YEAR, 1841,

when Sir Colin Campbell was Governor of Ceylon. It was then ceasing to be merely a military dependency of the British Crown, but was becoming a Colony, while Mercantile and Planting enterprise were beginning to develop. It is not intended to give a history of these enterprises, but something may be said as to the causes for this change. In a word, it was the abolition of differential duties on coffee, which had been imposed on the produce of Foreign Countries and even on that of our own possessions in favor of the West Indies.

In these days, when few middle-class families have not some friend or relation connected with the Island, it may sound strange, that Ceylon in the "Forties" was very often confounded with Sierra Leone, and intending voyagers were sympathised with as going out to one of the most unhealthy countries in the world.

As early as 1837—perhaps earlier—some few plantations had been commenced; the Governor Sir Edward Barnes had himself opened land near Peradeniya, rendered possible by the opening of the road to Kandy under his energetic rule.

PLANTING

was very experimental in those days, and much capital was wasted, by planting in unsuitable situations. The great rush for land however began in 1841 and land was then readily sold by the Government at 5s an acre, as a reference to the *Government Gazette* for that year will show. Unhappily much land was bought and planting commenced by Civil Servants and Military men and much disaster followed leading to regulations which have lately been revised prohibiting such investments. Experience in cultivation and finance had to be acquired, wanting which many proprietors were ruined and by the year 1847 few estates remained in the hands of the original owners. Experience at last came,—not a little assisted by the local press, through which every improvement became common property, producing valuable discussion. Wave after wave of alternate prosperity and depression have characterised the Enterprise up to the time when Coffee had to give place to Tea.

In those early days the

SOCIETY

outside the Civil and Military officers was very limited. A few merchants had offices in the Fort where their assistants mostly lived to protect the hard cash in the strong room; no Bank having been established until 1841, when the "Bank of Ceylon was opened. There was no decent hotel in those times; the Colombo Resthouse would now be a disgrace to an outstation; but there was much hospitality to strangers, and Captains of ships were always entertained by the merchants, to whom their vessels were consigned. Admission to the use of the Library with the privilege of attending the dances every fortnight, was by ballot. There were then two Regiments of Royal Troops besides the Ceylon Rifles, Artillery and Gun Lascars. Not long before there had been

FOUR REGIMENTS,

stationed in the island. With the influx of new people, houses and furniture were wanted and except old Dutch furniture in the houses of Burghers,—often very handsome and made of valuable woods,—there was little to be had, except a few articles manufactured outside and brought in for sale on pingoes chiefly, It was not an uncommon thing for somebody to say to another about to leave the island:—"I am sorry you are going away,

HAVE YOU ANY FURNITURE TO SELL?"

Not only furniture but gentlemen's and ladies' clothing articles were difficult to obtain, beyond plain things which could be made by local tailors and needlewomen. The writer not knowing what head covering might be worn, brought out with him a silk hat costing 6s 8d which was admired by all beholders: many were the enquiries "Where did you get your hat?" At that time the Colonial Secretary was wearing a beaver, the color of a fox's brush. Soon after, things changed by a curious circumstance. A new Chief Justice came out and in his train a Scotch gentleman, who practised as a notary afterwards and later on as a magistrate at an outstation. His wife, with an eye to the main chance, brought with her an invoice of ladyies' goods which were sold off at once. This lady saw at a glance the nakedness of the land and having a brother in the drapery trade, communicated her views to him, which resulted in the establishment of

A GENERAL STORE

of high character and which celebrated its jubilee only lately. Retail business by Europeans has since progressed largely in all its branches. One of the most pressing wants at that time was

ROADS IN THE INTERIOR.

The Kandy, the Kurnegalle, the Galle, the Gampola, the Negombo, the Putlam and the Matale roads alone existed. Estates which did not adjoin these roads were reached at best by bridlepaths, but most often by a mere track through jungle over rock and river which caused those clever and sure-footed Pegu ponies to be in great request,—rice and stores reaching the estates by coolies and tavelam bullocks. The facilities for locomotion now enjoyed independently of railways, are chiefly due to the late Major Skinner and his able assistant Capt. Evatt and his subordinates. There were then mail coaches (so-called) on the Kandy and Galle roads which started daily at morning gun-fire. Our merchants were few; the business of coffee curing and shipping had not then come into existence; nor had the trade in piece goods and European articles been developed by the circulation of money on the plantations. A merchant leaving for Europe would be always accompanied to the Wharf by his brother merchants. Intercourse with Europeans was then almost entirely by

SAILING SHIPS;

merchandise and produce coming and going in the same way. Mr. Wm. Tindall of London and Scarborough was the owner of nearly all the vessels which traded with Ceylon; their Commanders being well-known men well received everywhere. Any one who wished to use the Overland Route organised by Waghorn, would go up to Bombay by our little mail-steamer, "Seaforth" going on by Indian Navy steamer to Suez, and thence in a very rough way across the desert to Cairo and to Alexandria and onwards. Our Overland Mails came in and went out once a month. During the monsoon they were brought down by Dak from Bombay. In the North-East monsoon they came by the Colonial steamer "Seaforth" from Bombay. The arrival of the

ENGLISH MAIL

was a very exciting thing: for it happened mostly, that the outward mail had to be despatched in a matter of hours after. Perhaps there is no European now living in Ceylon who remembers the arrival of the mail announcing the birth of H. R. H. the Prince of Wales and the Breach promotion in 1841. On that occasion after the steamer was signalled, Civilians, Military and Mercantile men were at the Wharf awaiting the Captain of the steamer to land. When he came, he announced to the recipients themselves their new honours. That gentleman after a prosperous career as a merchant in Colombo is now at a good old age, living near London. The passage of the mail was then about a month—possibly more—for when Capt. Ingledew the Pioneer of the P. & O. Company, brought letters to Galle in the

steamer "India" in 30 days, it was considered a great feat. Since that time the large and powerful steamers of the P. & O. and British India Company, besides many other modern lines, with tho opening of the Suez Canal, have roduced the time occupied in transit and expensos of travelling to about half of what they were up to as late as 1871. Postal facilities of all kinds now exist which were undreamed of in the 40's 50's and 60's. The early planters had among other difficulties, that of

FETCHING THEIR MONEY

in hard cash up to the estates which generally required a personal visit every month to Kandy. The provision of this money was by Government notes cashed at the Kandy Kachcheri. Considering the temptation to highway robbery and the facilities for it in lonely corners, it speaks well for the natives, that the number of these crimes might have been counted on the fingers of one hand. A greater trial to the planter was

THE LABOUR QUESTION

especially for clearing jungles for which Sinhaleso villagers are specially adapted; those were not the days of contractors for felling and burning, and the immigration of Tamils for all the after operations had not been systematisod.

AMUSEMENTS

were few, Governor's Balls, Race Balls and dinner parties in Colombo were about all. In the Planting districts perhaps the monthly visit to Kandy where the pioneer enjoyed himself very much like Jack ashoro, was a beneficial change which the circumstances of his life required. It might then have been said.

"The sound of the church-going bell
These valleys and rocks never heard."

There were Chaplaincies in Colombo, Kandy, Galle and Trincomalie; Missionaries both Church, Presbyterians and Non-Conformists at several stations with Churches and Chapels in Colombo and Kandy, but the privileges of public worship which dwellers in tho jungle now enjoy, though these might be improved and extended, did not exist. The most important improvement, and cause of the great contrast between the present and the earlier times has been the introduction of

RAILWAYS.

The facilo communication between the Plains and the Hills is a boon to the health of Europeans, whilst its is an enormous advantage to the Planting Interest, on the prosperity of which, as seen by its ups and downs in sixty years, the well-being of the island depends.

R.E.L.

JAPANESE CIVILISATION.

BATHING. Cleanliness is one of the few original items of Japanese civilisation. Almost all other Japanese institutions have their root in China, but not tubs. Their hot baths—for they almost all bathe in very hot water of about 110° Fahrenheit—also help to keep them warm in winter. For though moderately hot water gives a chilly reaction, this is not the case when the water is extremely hot, neither is there then any fear of catching cold. There are some eight hundred public baths in the city of Tokyo, in which it is calculated that three hundred thousand persons bathe daily, at a cost of 1 *sen* 3 *rin* (about a halfpenny of English money) per head. A reduction of 3 *rin* is made for children. In addition to this, every respectable private house has its own bath-room.

HOW TEA IS DRUNK IN JAPAN.

The tea drunk in respectable Japanese households generally costs about 25 cents a pound, while from 50 cents to $1 will be paid for a better quality, fit to set before an honoured guest. The most expensive Uji tea costs $6 per pound. At tho opposite end of the scale stands tho so-called *bancha*, the tea of the lower classes, 5 cents a pound made out of chopped loaves, stalks, and bits of wood takon from the trimmings of the tea-plant; for this beverage is tea, after all, little as its flavour has in common with that of Bohea or of Uji. Other tea-like infusions sometimes to be met with are *Kosen*, made by pouring hot water on a mixture of various fragrant substances, such as orange-peel, the seeds of the xanthoxylon, etc; *Sakura-yu*, an infusion of salted cherry-blossoms; *Mugi-yu*, an infusion of parched barley; *Mame-cha*, a similar preparation of beans. *Fuku-ja*, or "luck tea," is made of salted plums, sea-weed, and xanthoxylon seeds, and is partaken of in every Japanese household on the last night of the year. Japanese tea, unlike Chinese, must not be made with boiling water, or it will give an intolerably bitter decoction; and the finer the quality of the tea, the less hot must be the water employed. The Japanese tea equipage actually includes a small open jug called the "water-cooler" (*yu-zamashi*), to which the hot water is, if necessary, transferred before being poured on the tea-leaves. Even so, the first brew is often thrown away as too bitter to drink. The consequence of this is that Japanese servants, when they first come to an English house, always have to be taught how to treat our Chinese or Indian tea, and generally begin by giving practical proof of their incredulity on the subject of the indispensable virtue of boiling water.—*B. H. Chamberlain.*

THE OPENING UP OF NORTH TRAVANCORE.

INTERESTING EXPERIENCES OF MR. BENZIE.—Mr. Geo. Benzie, the well-known surveyor, gave us some interesting information yesterday on the subject of the big work he is now carrying on in Travancore. with Mr. Chas. Gordon, in connection with the cart-road to be made through the western side of the Sylhet Tea Company's new property. to provide an outlet for it in the direction of Cochin. Tho new road will only go to the boundary of the Sylhet Company's land, and between that point and the present termination of the Cochin road there is an interval through which it is hoped the Travancore Government will eventually make a road, so as to establish complete communication. In the meanwhile the Sylhet Company are pushing on with their road at all speed, tho contract being in the hands of Mr. Benzie, assisted by Mr. Gordon.

Talking about his recent trip to Travancore, Mr. Benzie said:—"I was over there for six weeks this time, and, when I left, the first eight miles of roadway were completed, and the work was going on under the supervision of Mr. Gordon. How long the road will ultimately be I cannot say, but I should think to the boundary of the Sylhet Company's land it must be from 30 to 35 miles. I spent the bulk of my time this last visit in exploring the country and looking for ways and means of cutting the road, for that part is nearly all jungle. It is a very wild country to have to travel through, and, in parts where I went, natives even had never been. The natives of this particular part of Travancore are a nomadic class. They put up grass huts and stay in them for a time, cultivating *kurakkan*, like our natives do here, one year, but the following year they may be 40 or 60 miles away. They are called *Mathuvars*, or back-carriers—that is to say, they carry everything on their backs. They are splendid jungle men and handle their jungle—knives well, and they work willingly enough, but unfortunately their numbers are few. They are Tamils, of course, but as compared with the Tamil coolies you see in Ceylon they are a civilised race. They are much the same as the coolies in regard to build and physical appearance, but their mannor is more independent; they don't come up to you in the cringing way that a Tamil cooly does, and they are a heap pluckier than the coolies.

THE HOME OF THE ELEPHANT.—"The whole place swarms with elephants. On the Cardamom Hills, which belong to tho Rajah of Travancore, and which abut on tho Sylhet lands, it is estimated that there aro fully 6,000 elephants, and you cannot leave a house or a tent of a night without a watchman and big fires without running a very great risk of its disappearing before the morning.

CAMPING OUT.—"Yes, I camp out the whole time sometimes sleeping in the open and sometimes under cover of a tent. The elevation is about 5,000 feet, and in February and March it freezes there of a morning, but at other times it is much drier than similar elevations in Ceylon, and it is not nearly so hot during the day as in Ceylon. And it is grand soil; very fine indeed. The very patana land even is better soil than a lot of the forest-land in Ceylon. On the Cardamom hills, as you know, cardamoms are indigenous; they are not cultivated in any way. The part of the Sylhet lands where I am working, as I have told you, is mostly jungle. You ask if it is not risky for the Company to make this road before getting a definite answer from the Travancore Government that will continue it. Other people have asked me the same question, and my reply has always been that the road is necessary for the development of that side of the Sylhet lands. Whether it be continued or not the road must be made. It is through the finest part of the Sylhet land."

A NEW SANITARIUM.—"The part of Travancore where I am working is in the same range as, and probably within 15 miles of, Kodi Kanal, which is said to possess the finest climate in India, and which has been fixed on now as the site for the chief Observatory in India. It is already largely used as a sanitarium, and there are many boarding houses there, the people who visit the place coming chiefly from Madura, Trichinopoly, and Madras, and they prefer it to Ooty. One gets there every English comfort, and plenty of pastime, such as good tennis, billiards, shooting &c. I could recommend it to Ceylon folk requiring a hill-change, the bugbear for Ceylon people being, however, the steamer trip between here and Tuticorin. Still, once at Tuticorin, one can get to it pretty easily and cheaply. One has to go by railway from Tuticorin and from the point where you leave the railway there is a journey of over 30 miles of cart-road, and then one of eight miles in saddle or in chairs. Steamer fare from Ceylon to Tuticorin is R21; railway fare from Tuti to the nearest station (120 miles) is R9; cost of conveyance over rest of the country R4; total R34 for the single journey, and (of course) less for the return trip. You can leave Tuticorin at 2 o'clock today and arrive at Kodi Kanal in time for breakfast tomorrow morning. I don't suppose the Nuwara Eliya people will thank me for saying all this, but it really is a very delightful sanitarium. I am off on Monday or Tuesday again for Travancore, and I shall be away there several months at all events."

"LADY BIRDS" IN CALIFORNIA.

DEATH OF THE ENTOMOLOGIST WHO INTRODUCED THEM.

Professor Charles Valentine Riley, whose death resulted from a fractured skull caused by a fall from a bicycle, was the leading agricultural entomologist of the United States. Born at Walton-on-Thames in 1843, he passed his early years there and at Chelsea. He was educated in France and Germany, where he acquired not only a knowledge of the languages, but became very skilled in the use of the pencil, an accomplishment that proved of great use to him as his love of entomology developed itself. In 1860 he crossed the Atlantic and settled on a farm in Illinois, where he devoted himself to agriculture and natural history pursuits. In 1864 he took part in the civil war in the ranks of an Illinois regiment of Volunteers. Four years later he was appointed State Entomologist of Missouri, and during his tenure of office he prepared a remarkable series of illustrated monographs. In 1877 he became the leader of a commission appointed to inquire into the ravages of the Rocky Mountain locust, and in the following year the office of Government Entomologist of the United States was conferred upon him, a post from which he retired only a year ago. He published a large number of memoirs upon the Hessian fly, army worm, cotton worm, chinch bug, phylloxera, and other insect pests. One of his most brilliant exploits was the suppression of a scale insect which threatened to destroy the orange groves of California; this he did by introducing and acclimatizing from Australia an insect—allied to the English ladybird—which preyed upon the scale insect. Whilst at Washington he organized the Entomological Museum and started the periodical *Insect Life*, now in its seventh year. He lectured at different times at various Universities and colleges, and in 1889 the entire charge of the agricultural section of the United States display at the Paris Exhibition was intrusted to him. He had already received a gold medal from the French Government in recognition of his researches into the life history of phylloxera, and in 1889 the cross of the Legion of Honour was bestowed upon him. He was a frequent visitor to his native land, and was here as recently as last year, when he attended the Oxford meeting of the British Association.

THE NEW DIMBULA COMPANY, LIMITED.

REPORT, SEASON 1894-95.

In presenting their tenth Annual Report the Directors are enabled to recommend the payment in full of all arrears of dividend on the "B" shares and at the same time to commence payment of dividend on the "C" shares, which hitherto have not participated in the profits of the Company. The estimated yield of Tea for the past year has been exceeded, but prices have been lower than in the preceding year.

The estate is reported in good order; considerable additions have been made to the factory accommodation in the past year, and larger additions have been sanctioned for the present year to meet the increasing yield from the larger acreage now in bearing, and to provide as far as possible for the efficient treatment of the Tea. The full area of cultivated land (2,193 acres) will come into bearing during the present year.

The accounts now presented show a surplus of £16,270 3s. after writing off the balance of Tea Extension Account, viz., £69 8s 4d. and the balance £1,750 16s 11d. of the "Factory and Machinery Account." The Directors propose a dividend of 8 per cent. per annum on "A" shares for the year ended 30th June last, 4 per cent. of which was paid in March. The Directors also propose the payment in full of all arrears of dividend on the "B" shares amounting to 8 per cent, 4 per cent. of which was paid in March last, and a dividend of 8 per cent. for the year ending June 30th last, and the payment of 6 per cent. on the "C" shares. The Directors further propose an additional dividend of 2 per cent. on all shares, and the placing of £3,000 to a Reserve Fund.

The Directors have much pleasure in recording their appreciation of the General Management in Ceylon, and feel that special credit is due to the Resident Manager.—By order of the Board, A. CRABBE, Secretary.

JAPANESE AND CHINESE FOR THE STRAITS.

The well known politician, Mr. Oi Keutaro, is now staying at Singapore, where he is believed to be engaged in business. In a recent letter to a friend at home, he speaks with admiration of the influence exercised by the Chinese population there, and of the general trustworthiness of Chinese merchants. Another surprise to him has been that the summer is more endurable at Singapore than in

Tokyo, and a third cause of astonishment is the cheapness of house rent. He suggests that it might be profitable to organize a society for the emigration of carpenters, plasterers, and other artizans from Japan.

TEA PROSPECTS IN INDIA.

A Correspondent writes to the *Englishman*:—

"My advices from the tea-producing districts are anything but cheerful. There is now a complaint of want of rain, and the nights are too cold. The consequence is that the prospects for October (generally a favourable month) are very poor, and all circumstances point to an early, and I should say, for producers, a disastrous close to the season. The point I wish to dwell on forcibly is that the total crop of tea for 1895 will of a certainty be much less than that anticipated by the Indian Tea Association. This is no alarmist's prediction. I have no ulterior reason to induce my writing on so important a subject, and I give you my name as a guarantee of good faith. I am a large producer myself, and my only hope is that better prices will compensate in some degree for a short crop."

THE PREPARATION OF CAMPHOR

In answer to his enquiry on our behalf, Mr. R. Porter has received the following second reply from friends in China:—

Your enquiry about the manufacture of Camphor, I was totally unable to answer till the other day, when I met a very good fellow from Formosa. I give his information, in case it may be of use. The Camphor trees grow in the hills, none on the plains. They are more abundant in the northern portion of Formosa. Some of the trees are very large, 5 to 6 feet in girth, and proportionately tall. The larger trees give a better yield of Camphor. The Camphor is obtained as follows:—The roots of the trees are exposed, and with a kind of axe pieces about the size of a man's hand (sometimes twice that size) are cut from the external layers of the root. Some of the pieces may be an inch thick, some half an inch, all include bark, and a thin slice of the woody matter. The pieces of Camphor root are put into a large, somewhat shallow iron pot. The pot is covered with a jar, a little water is put along with the wood. Fire is applied, and the camphor distils, being caught on the sides of the jar. The workmen live in camps, and for each set of camps there is a central stove. The management of the manufacture is all in the hands of foreigners. Formerly the Mandarins tried to manage it, and sell the camphor to the foreigners, but this plan did not succeed. The number of trees is very large; they are not planted, but purely self-sown. The trees already sliced, generally, but not always, die."

TEA FOR TIBET.

Mr. A. de Rosthorn's pamphlet on the Tea Cultivation in Western Ssuch'nan and the Tea Trade with Tibet via Tachienlu is very interesting and instructive, and in the compass of 40 pages gives much practical and valuable information about the Tea trade between China and Tibet. The information has been acquired by Mr. de Rosthorn partly by personal observation and enquiry and partly from official records. Mr. de Rosthorn shews, what some of us knew already, that of the so-called Tea, exported from China via Tachienlu into Tibet, a large proportion — about 65 per cent — is not tea but the leaves of wild trees, "brushwood." He gives an account of the manufacture of this "tea," tells us how much is exported, gives the revenue derived from it, the cost when laid down in Tibet, and other particulars interesting to the Indian tea grower. We have also a very suggestive reference to the political question which may be involved in the treatment of the Tea trade with Tibet by the Chinese Government.—*Luzac's Oriental List.*

TEA BULKING ON ESTATES.

As is well-known, it has for years past been the practice to bulk Indian and Ceylon teas at the gardens before they are despatched to the markets, or to bulk them in London if it has not been done at the gardens. This has been done to secure regular and uniform quality. Serious complaints have reached us, however, that some importers are neglecting this practice. They are bringing teas on to the English market which are not bulked, and are taking the risk of being detected. When the irregular character of the tea in the chests is discovered, and a claim is made, it is quietly allowed, and the matter treated as accidental. If the non-bulking is not detected, then the cost of the process is saved and goes into the pockets of the importer The omission, however, if persisted in, must lower the confidence in Indian and Ceylon teas—a confidence which has naturally tended to enhance their popularity, and has contributed to the growth in consumption which has been such a marked feature of the tea trade for some years past Such a policy, moreover, is dangerous. The greed of the Chinamen, which led to the deterioration of Chinese tea, and the consequent falling off in the demand, ought to be remembered by all but the most indifferent or careless among the importers. There is little doubt that similar conduct on the part of those interested in Indian and Ceylon imports will lead to a like result. Once let the confidence of the trade and the public be shaken it will not be easily reinstated, and the continuance of these non-bulking tricks will do an amount of damage to the trade which cannot be readily estimated. At present the evil has not grown strong, but, unless checked, and that speedily, disaster is not far off. We hope the London Wholesale Tea-dealers' Association, which has rendered such practical service in the past, will take this matter up, and use its great influence to put a stop to it before our immense and still-growing trade in Indian and Ceylon teas is seriously damaged.—London *Grocer.*

PARTNER WANTED FOR LIBERIAN COFFEE.

An advertiser in our advertising columns, hailing from Sumatra, who has £5,000 of his own, seeks for a practical coffee-planting partner willing to furnish £2,500 with the right of participating in one-third the returns. The notice is a thoroughly genuine one.

"LADY BIRDS."

Our London Correspondent suggests that instead of making further trial of the importation of these little insects from California, a direct endeavour should be made to obtain some of the Australian variety. The success attained by the late Professor Riley in his introduction of this insect in relieving the fruit-growers of California from a great pest which threatened the distinction of their orange-groves, should induce us to persevere in the same direction. That victory has been described as the "most brilliant" achieved by the Professor during his career. We have in this a special encouragement to further effort in the same direction. We fear the death of the "lady-birds" during their journey outward to Ceylon that we previously reported, is not to be accounted for by the fact that all air was excluded from them. We are ourselves aware of the tenacity of insect life under such exclusion to which a recent correspondence bore testimony. Its vitality under circumstances even more likely to produce death, has been repeatedly evidenced, and we believe the cause of failure must be sought in some

other directions. It seems difficult to imagine that an insect that delights in the sun heat of a Californian summer would succumb to even the heat of the Red Sea while in transit. But there may be some other climatic influence unfavourable to the life of the "lady-birds" which caused their death in the long transit across America as well as Europe. It is certainly wise to make a fresh attempt with the allied form of Australian beetle, to which reference has been made. As this was successfully transported to and acclimatized in California, there can be little doubt, we should say, that it would bear the transfer to Ceylon; and our correspondent and others interested in England will be glad to hear that already steps hav been taken by a Ceylon planter to endeavour to get a supply of the little enemy of the coffee as well as orange "coccus" (bug) from Queensland.

DRUG REPORT.

(From *Chemist and Druggist.*)

London, October 10.

CINCHONA—A parcel of 20 serons fine cultivated Bolivian Calisaya (MC brand) has just arrived, and will shortly be offered for sale. The holders expect to get about 2s 3d per lb for it. The bulk of the supply of cultivated Calisaya in flat pieces which was offered at the last drug sales has been sold privately at firm prices.

COCA-LEAVES—Fine qualities have been rather scarce lately, but this week there have been a few new arrivals, including good bright South American Huanaco, for which holders expect to be able to get 1s 4d per lb. For fair but somewhat broken Truxillo 1s per lb is asked privately. There has also been an arrival of 22 boxes of very fine coca leaves from Ceylon, said to be the finest ever placed on the market from that island. This lot is held for 1s 6d per lb.

ESSENTIAL OILS—Lemongrass oil has been dealt in at 2d per oz on the spot for fair native brands. There are no quotations to arrive at present, as it is said that all available oil has been shipped. Citronella oil is still quoted at 1s 4d per lb for tins and drums on the spot. The quotations for arrival are more or less nominal—viz 1s 2¾d per lb for tins and 1s 2½d for drums c i f. Cassia oil is firmly held at 7s 6d to 8s 6d per lb for 70-per-cent to 85-per-cent quality on the spot. The quotations for shipment are practically worthless, because no oil is offered above 45 per cent cinnamic aldehyde, and this quality is too low to engage attention.

VANILLA—Mauritius report that the market is very firm, while vanilla of good quality is wanting. The probable yield of the next crop is estimated at about 7,800 lb. The following figures show the exports of vanilla from Mauritius in the last three years:—

	1892	1893	1894
	kilos	kilos	kilos
Weight	17,100	6,990	4,136
	R	R	R
Value	174,074	83,895	32,720

QUININE—At the end of last week a considerable business was done at slightly higher prices, 5,000 oz second-hand German in bulk on the spot selling at 1s 1⅜d and 20,000 oz ditto for January delivery at 1⅜d per oz. One of the manufacturers also reported a sale 20,000 oz deliverable at the end of January at the full quotation of 1s 2d per oz. During the early part of the present week there has also been a good demand, with sales on the spot at from 1s 1½d to 1s 1⅝d, and January at 1s 1⅝d. The market closes slightly weaker, with spot sellers at 1s 1 d per oz. Some excitement has been caused by the sale a couple of days ago to a firm of brokers of a parcel of Brunswick quinine for April delivery at 1s 2¼d per oz. The sale was made by the agent of the manufacturer, but as that gentleman also carries on business on his own account it is difficult to say whether it ought to be classed as the second-hand or first-hand transaction. If the latter, it would be, according to the other manufacturers, a breach of the spirit of the agreement which exists between the makers and which is understood to provide that they shall not sell further ahead than sixty days. A considerable business has been done lately by most of the manufacturers especially for export to the States

London, Oct. 17th.

KOLA.—The first hand supply of kola nuts in London is mostly in the hands of one firm, who are inclined to ask much higher prices, on account, they say, of the reduction in the supply. In September the arrivals were only about 20 packages, and since then only one important consignment has come to hand in Liverpool. It consists of 21 packages, of which 15 are nuts in a fresh state. For best quality 1s 2d per lb is asked privately, which would show an advance of 4d per lb. Of 40 packages offered today only about 6 found buyers very little interest being manifested in the article, Fair, partly broken, washed West Indian sold at 11d. dull mouldy at 5½d to 7½d, wormy at 6½d per lb. For, fine washed kola 1s 3d per lb was suggested as the price.

ESSENTIAL OILS—Oils of Citronella and Lemongrass remain firm at the last spot quotations of 1s 4d per lb for the former in tins and drums, and 2d per oz for the last-named Lemongrass and Citronella keep firm. Two cases oil of Cinnamon-bark sold today at 6d per oz; for a 4 case parcel of Cinnamon oil a bid of 3d per oz is to be submitted.

QUININE—No business is reported this week, and the maket price is more or less nominal; 1s 1⅜d per oz would probably be the nearest quotation for second-hand German brands. At auction today 5,000 oz of Brunswick quinine in bulk were bought in at 1s 1½d per oz. No bids were made for the parcel. The manufacturers' prices remain as follows:—Howards in vials 1s 4d to 1s 5d, in tins 1s 3d to 1s 4d; Whiffen in vials 1s 4d, in tins 1s 2d; Pelletier in vials 1s 5d; Fabrica Lombarda in vials 1s 4d, in tins 1s 2d; all the German factories, in tins 1s 2d per oz.

VANILLA—A considerable business has been done in vanilla of all kinds since the last auction at extemely high prices. This article is now very dear, especially for the better grades: while vanilla suitable for essence-manufacturers, which not so long ago could be had at about 8s 6d, now easily realises from 12s to 12s 6d per lb. The stocks in first hands in London is said to be very low indeed. At auction today 81 tins were offered almost the whole of which sold with excellent competition at an advance of from 2s to 4s per lb. Fine slightly crystallised 8 to 8½ inch; Bourbon beans bought from 30s 6d to 31s; medium chocolate 5½ inches to 7 inches, 22s 6d to 23s; ordinary brownish, 4½ inches to 6½ inches, 15s to 18s; common foxy from 4s 3d down to 3s per lb. Reports from Bourbon indicate that prices are likely be to higher for the new crop.

ARBORICULTURAL TRAINING AT EDINBURGH UNIVERSITY.

Mr. Long, President of the Board of Agriculture, received in Edinburgh on Oct. 23 a deputation from the Arboricultural Society with reference to a forestry in Scotland, and the limited facilities for obtaining forestry education in Scotland as compared with Germany and other countries. Mr. Long expressed himself as favourable to the appointment of an arboricultural correspondent in Edinburgh, in preference to a sub-office in connection with agriculture.—*O. Mail.*

COFFEE LAND IN THE STRAITS.

Two blocks of land lying opposite the Port Dickson Coffee Co.'s concession, of 500 acres each, have been applied for by Messrs. Burt and Sharpe of Mincing Lane, London.—*S. F. Press.*

NEW PRODUCTS.—It has been most interesting to us to learn from an experienced planter like Mr. A. J. Thomas, the great success which, in his opinion, is attending the cultivation of Liberian coffee and cacao as well as tea on the well-known Morankande property in the Madawalatenne district. It is quite cheering to hear of the "Liberian" flourishing as it does, while "catch" crops of "Nalknaad" coffee are arranged for, between both the Liberian and the Cacao.—Mr. Thomas was one of the few planters who gave truly effective evidence before the Prædial Products Commission; for, he and his neighbours have been and still are very much troubled with thieves. The Commission, unfortunately, has not resulted in much comfort for them.

THEFTS OF PRÆDIAL PRODUCTS.

One would not be justified in inferring, either from the tenor of the Report of the Commission appointed to advise on the theft of prædial products, or from our approval of the conclusions arrived at by the Commissioners, that there was no occasion for their appointment. Not only did the prevalence of thefts, especially of cacao pods from fields, justify the inquiry that was set on foot by the Government; but the inquiry itself has been useful in many ways. From the official point of view, there has been this great advantage, that the Government has by its action cleared itself from the charge, which had begun to be prepared against it, of being indifferent to the losses sustained by industries which are the mainstay of the prosperity of the Island, while the outcome of the inquiry has, to a great extent, justified its attitude, which too had exposed it to some reproach, of unwillingness to place further special legislation on the statute book. From the planters' standpoint, there is ground for satisfaction in the evidence that their complaints have not passed unheeded, and that the labours of the Commission cannot fail to make the official world better acquainted with the difficulties and the needs of the agriculturist than it had been before. At first sight it may appear that the planters failed to make out their case and that the inquiry was fruitless; and already such familiar expressions as much ado about nothing, love's labour lost, the mountain in labour, much cry and little wool, have been current; but we do not regret the appointment of the Commission. The Report should open the eyes of planters—their own brethren being witnesses—to the fact that they do not always take as great care of their goods as they should; and the lack of due watchfulness, it must be remembered, not only results in loss, but is also an encouragement to wrong-doing to people who have hazy ideas of *meum* and *tuum*, and who think the harm comes in, not so much in appropriating what does not belong to themselves, as in being so stupid as to be caught doing it. This caution is specially necessary in view of the circumstance that the labourers resident on estates are themselves not above suspicion, and that as often as not, if they are not the thieves, they are in league with them, or have knowledge of their doings. The value that the employer places on his products, as evidenced by reasonable precautions against their being stolen, is often their best protection; but if master takes scanty precautions against pilfering in the factory or in the store, or even in the field, Ramaswamy and Appu Sinho think nothing of helping themselves to what is so lightly valued. On the other hand, though the Government may not be able to protect the employer against his own employees on a large plantation, it is bound to afford every tax-payer the protection and justice which it is the function of civilized States to provide. By care in the choice of men for the rank and file of the regular and rural Police, by the provision of adequate detective machinery, by ensuring the due supervision of subordinates, by the appointment of qualified Magistrates, and by rendering the punishment of offenders deterrent, it can do much to prevent thieving and to protect the agriculturist. We use the word agriculturist in its widest sense; for it is not only the owner of large estates who suffers from the prevalence of thefts, but the humblest villager as well, to whom the loss of his garden produce is often a direct discouragement to industry.

These truths, we say, have been brought out by the labours of the Commissioners, not as discoveries, but as factors to be reckoned with in the agricultural enterprise of the Island. If special legislation cannot be justified on the evidence placed before the Commissioners, it is because that evidence, while proving that thefts were much more frequent and serious some time ago, established the efficacy of severe sentences by experienced magistrates, and rigorous prison discipline under a new *regime* in lessening thefts. The Report admits the latter cause, which implies the existence of the former; for without magistrates fully appreciating the gravity of thefts of prædial products, the jails would not have the materials on which to exercise their rigour. Another cause which is specially mentioned is deserving of attention—the employment of villagers on estates. It would be well, even at some inconvenience to show indulgence to the irregularity which is too often a distinguishing feature of village labour, not only as a matter of benevolence to neighbours, but also as a protection against thefts. The thieves of a village are generally the idlers, and there is no little merit in weaning people from dishonesty, while weaning them from idleness. But in order that a fair measure of success should attend such employment, the village headmen must be warned, both by the superior headmen, and by the revenue officers, that they should have an eye on the bad characters who may find employment on estates, and also rigorously prosecute those who have no ostensible means of livelihood.

These are general considerations, and we can lay no claim to originality o their behalf; but the remedies, though old-fashioned and slow, are likely to be permanently efficacious if persisted in. If education, into which morality enters, is the best means of arresting the spread of crime generally, industry should be the first step in that education. We content ourselves today with these general observations, and may touch on some special features of the Report in another issue.

VARIOUS PLANTING NOTES.

"Planting Opinion" understands that Government will shortly abolish the post of Quinologist, and that the Botanical Department will be quite separated from the Cinchona Department, the former having its headquarters in Madras. A former planter on the Nilgiris, lately in the Jail Department, will probably be offered the post of superintendent of the Cinchona gardens.—*Madras Times.*

A Mammoth Potato.—America has broken the record with a "mammoth" potato, which is 28 inches long, 14 inches in diameter, and weighs 86 lb. 10 oz. This is equivalent in weight to over a bushel of ordinary potatoes. It was grown by Mr. J. B. Swan, of Loveland, Colorado, who raised 430 bushels of potatoes on a single acre last season. The mammoth potato is to be used for seed, it being "too big to eat."—*Globe.*

Trade with Australia.—A leading Australian house has sent a representative to Colombo to endeavour to establish between Victoria and Ceylon, trade relations in the following lines:—"Fresh fruit, fruit preserve—jam, &c., biscuits, cordials, candles, soaps (toilet and household), beef and mutton tallow, general produce of Australia." Taking so much of our tea as Australia does, it is very desirable we should become customers in turn, as far as this Colony possibly can use up the products referred to.

DEATH OF TREES BY SUNSTROKE.

At a time when local coconut planters are discussing the apparent "spontaneous combustion" of coconut palms due to the fall of meteorites, it is of interest to read the following in the latest *Gardeners' Chronicle*:—

During the late extraordinary warm spell, the writer of this paragraph was called upon to see a large Sugar Maple tree that was supposed to have been destroyed by a leak of the city gas-main at the root; but on examination showed that the tree died, literally, from sunstroke. It is strange that close observers of trees are unable to see when anything is out of the common run of things, and consequently note that something is going wrong. This Sugar Maple had been planted on the street probably a quarter of a century ago, and was about 4 feet in circumference; but the trunk was almost triangular, and yet this peculiarity seemed to attract no attention. The tree was simply triangular because on three sides of the tree the bark and wood had evidently been destroyed years ago, while the outer bark still continued to cover up the injury, and the only live wood was on the angles of the trunk. Only about one-third of the trunk was practically alive. When the exceedingly warm spell came, it was impossible for these limited ducts to supply the moisture required for such a large surface of foliage, and the tree, therefore, literally died from inability to furnish the moisture required for transpiration. It may be always taken for granted, that when the trunk of a tree naturally cylindrical, takes an angular form, there is something wrong beneath the bark, and an examination should at once be made. The flatter portions will usually be found dead. In this case, the bark should wholly be cut away from the dead portion, and the denuded part painted, in order to check rotting away. In time, the healthy wood may grow over the wound or lifeless part, and the life of the tree be eventually saved.

THE EAST INDIA TEA COMPANY

has been registered with a capital of £200,000, of which amount there will be a first issue of £170,000 in £10 shares. £85,000 of this amount will consist of preference shares at 6 per cent. The object of the Company is stated to be the amalgamation and taking over as going concern certain estates in India and Ceylon.

The estates to be dealt with in the manner indicated are those of the Doolabcherra, Mookhamcherra and Mahaousa Tea Companies, besides the gardens known as the Blackwater, Hapugastenne, and Waladowa. The properties altogether include about 12,660 acres, of which about 3,629 acres are already planted with tea. The prospectus states the properties in Ceylon include about 5,000 acres that will be available for the extension of cultivation in the island, and in view of the refusal of your Government to put up fresh land for sale for this, this available acreage will possess an exceptional value. A good deal of the land now cultivated is said not yet to be in full bearing, but the average profits for the past three years are stated to have been £9,875, while those for the past years were £12,586. The price to be paid for the four estates now yielding profits will be £158,000, and for the other two estates £7,000, the vendors taking as part of the purchase money 2,750 preference and 2,750 ordinary shares. The list for public subscription will close today. Enclosed with this I forward to you copy of the advertisement made, which includes the prospectus of the new Company.—London *Cor.*

VANILLA.—A report from Seychelles states that an abundant flowering of the vanilla vines is shown in all parts of the Archipelago, and the crop for 1896 is expected to be exceptionally good. —*Colonies and India*, Oct. 12.

THE EAST INDIA AND CEYLON TEA COMPANY, LIMITED.

CAPITAL £200,000,

Divided into 10,000 six per cent. Cumulative Preference Shares of £10 each, and 10,00 Ordinary Shares of £10 each.

The Preference Shares are entitled to a cumulative preferential dividend of 6 per cent per annum and a preference in return of capital.

Issue of £170,000, in 8,500 Preference Shares and 8,500 Ordinary Shares.

DIRECTORS:—P. R. Buchanan, Esq., 45, Leadenhall-street, E. C. (Chairman), Director of the North and South Sylhet Tea Companies, Limited; S Boulnois, Esq., 3, Love-lane, E.C., Director of the Mahaousa Tea Company, Limited; C. T. Richardson, Esq., 31, Binswood-avenue, Leamington, Director of the Mookhamcherra Tea Company, Limited; A. Bryans, Esq., 45, Leadenhall-street, E.C., Director of the Chargola Tea Association, Limited; L. Davidson, Esq., Superintendent of the Gikyanakande Tea Estate, Ceylon (Resident Director in Ceylon).

Particulars of the properties to be acquired by the company will be found in the statement—accompanying this Prospectus. They comprise about 12,660 acres of land, of which about 3,629 acres are already planted with tea. (See our London letter).

The exceptionally large area of land available for cultivation in Ceylon, amounting to about 5,000 acres, is a special feature of the undertaking, and should greatly add to its value. There is ample factory accommodation on the estates for all present requirements and the factories are supplied with all necessary machinery. Labour is plentiful, and an experienced staff of managers and assistants is in charge of the properties. Although a considerable area of cultivated land was either too young to yield crop, or only in a partial bearing, the average profits for the past three years from the Estates under cultivation, as will be seen from the Auditor's certificate set forth below, amounted to £9,874 19s 5d. It will also be seen that the profits for the past year were £12,586 7s 6d, and on this basis there would be sufficient to pay 6 per cent on the Preference Shares, and 9¾ per cent on the Ordinary Shares now being issued in respect of the four Estates under cultivation.

The prospects of the current season are good, and there was, on the 30th September last, an increase of 126,148 lb of tea over the crop at the same date last year; as the new planting comes into bearing the crop should be considerably increased, and larger profits in consequence realised. The Directors of the Company are all connected with the tea industry, and most of them have a practical knowledge of planting. The Company takes over the existing arrangements of the Vendor Companies, with their several officials and staff of employees, and the business will thus be carried on without break of any kind. The financial arrangements for working the estates now in force will also be continued by the Managing Agents in London, India and Coylon. Provision of further working capital is thus unnecessary, except for the development of the uncultivated lands, which is provided for as stated below. The properties are taken over as from the following dates, viz.:—Those of the Doolabcherra and Mookhamcherra Companies from tho 30th November, 1894; those of the Mahaousa Company from the 31st December, 1894, and the Blackwater Tea Estate from the 30th June, 1895. The several Vendors will receive interest at 6 per cent upon their purchase-money from these dates until the same is paid. It is proposed for the future to close accounts on tho 30th November in each year. Tho price to be paid by the Company for the four yielding properties is £158,000. The price to be paid for the Hapugastenne and Walawadowa Estates is £7,000, the remaining £5,000 of capital now issued being reserved for the opening out of same. The £30,000 of unissued shares will be available for the further development of these estates, or the purchase of other properties, as may be deemed desirable by the Directors.

PLANTING AND PRODUCE.

Tea in Damp Climates.—Mr. T. Christy recently made the suggestion that for the purpose of exportation to moist climates tea should be put up at the garden in what are now the familiar self-opening tins, in sizes of about twenty-five pounds each. The *Grocer*, supporting this view, he says: "It is well known that these tins are easily opened and closed, and that when properly made they keep their contents air-tight. The consumer using one of these tins would be able to take out tea sufficient for immediate requirements during the dry part of the day, and then close the package so that the leaf would keep fresh and sweet to the very last. It is important that care should be taken that tea at all times should be kept as free from any contamination as possible. It is so delicate in its nature—and the rapid modern methods of its preparation intensify this—that every precaution must be made to keep it fresh; and this simple and practical suggestion ought not to be overlooked by those interested in promoting this produce from Ceylon."

The Natal Tea Industry.—The development of the tea growing industry goes on apace in Natal. From very small beginnings—in 1885 the total crop was only 28,000 lb—the output has increased until about 1,000,000 lb of Natal tea is now produced chiefly for the South African market. We hear that extended cultivation is contemplated.

A Plant with a Law of its Own.—A valuable official report is that by Mr. Robert Thomson, formerly head of the Government plantations in Jamaica, upon the products of the department of Tolima in Colombia. It is the custom there to set the grasses and brushwood on fire in the dry season to prepare the ground for renewed pasturage. The effect of these fires, however, is very destructive, and many once-fruitful places are now barren deserts. But one plant flourishes, not only in spite of, but because of, the fiery ordeal through which it passes. This is the Chaparro, or *Rhopala obovata*, a dwarf tree, which "not only resists the fury of the flames, but fire is actually congenial and subservient to its existence." Its bark is peculiar. It consists of "a congeries of integuments or semi-detached layers. The outer portion, about half an inch thick, performs no organic function, and this portion of the bark, in conjunction with its peculiar composition, protects the inner vital integuments from injury by fire." Mr. Thomson points out that the plant has "made for itself a law of its own, for it has triumphed over the most disastrous element to all organic life."

Banana Cultivation.—The cultivation of the banana is making rapid strides in the West Indies, where, now that the means of exporting fruit have so much improved, its cultivation is found to be more profitable than that of the sugar cane. There is a banana plantation in Cuba covering an area of fifty square miles, containing on an average 2,500,000 trees and keeping in constant employment 3,500 persons. A fleet of twenty-six steamers is required to trasport the fruit to the United States.—*H. & C. Mail*, Oct. 18.

TEA IN MAURITIUS.

A few months ago Mr. J. T. Hawke was in Mauritius, and he says that Ceylon need fear no tea-planting rivalry in that part of the world, for there were only some 250 to 300 acres planted up, and the largest estate (one of 125 acres) belonged to the Assets Company. The tea was good—Indian jât,—and in the experimental gardens at Cuipeep there were 20 acres of tea planted, bearing 600 lb. to the acre, at an elevation of 1,800 feet, with a temperature equal to that of Nuwara Eliya. But tea is not likely to be cultivated largely in Mauritius; the French are too conservative and keep fondly to planting sugar, and to a small extent vanilla. On the other hand, Mr. Hawke says that the remarkable rise in the export of Ceylon tea to Mauritius is easily explained. The French Creoles like Ceylon tea, and are shewing a marked preference to it over the China article; while, over and above all, to use Mr. Hawkes' own words, "They are at last beginning to realise what is very true, and that is that coffee is not the drink for a tropical climate, and they are taking to tea instead."

In three weeks Mr. Hawkes hopes to leave for the Seychelles. He is going there to plant coffee to a small extent, as he has seen coffee growing there and bearing remarkably well, and he does not see why it should not be done on a large scale. He will, however, begin with only 50 acres. He expects to start in a fortnight or three weeks, and will probably remain in the Seychelles for a twelvemonth.—Local "Times."

A CINCHONA ANNIVERSARY.

October 20th will be a notable anniversary-day in the annals of the drug-trade, for it is twenty-five years ago next Sunday that the first public sales of Java cinchona-bark were held at Amsterdam. For eighteen years previous to 1870 cinchona-plants had been grown in the island with more or less success, but few, if any, of those connected with their propagation foresaw the gigantic dimensions which the industry was destined to take. It was, in fact, chiefly in order to stop the mouths of inconvenient questioners in the Dutch Parliament, who, yearly, on the occasion of the debate on the Dutch-Indian Estimates, worried the Government about their alleged waste of 1,500*l* to 2,000*l* a year on the cinchona-gardens, that the Indian authorities decided to send home a consignment of cinchona that the critics might be convinced that there was something to show for the expenditure. This consignment, weighing 933 half-kilos. (about 1,026 lbs.), consisting entirely of *Calisaya javanica* and *C. Pahudiana*, left Java in 1869, but it does not appear to have been sold until the autumn of the following year, along with further shipments. At any rate, the first public sale of Government bark (private plantations had not as yet come into bearing) was held on the date aforesaid. For size, compared to the Amsterdam cinchona-auctions of the present day, it was as the acorn to the oak, for it amounted to no more than 876 kilos, the loss in weight from the time of shipment to the day of sale having been no less than 13 per cent. The net proceeds of the sale were 1,935 florins (about 161*l*), or nearly 2*s* per lb. The result of the sale, and the determination of the Government to encourage the culture of cinchona with more energy than before, gave a strong impetus to the industry. Private planters, who had hitherto looked askance at cinchona (before 1870 only two estate-owners, in addition to the Government, had laid down experimental plantations), started up all over the island, and literally sowed the seed of the over-production from which they are now suffering. In 1875 the first bark-crop from private plantations was exported. It amounted to 3,125 half-kilos. Last year the Javan Government exported 654,851, and private planters 8,266,741 half-kilos.

Ceylon, now an extinct volcano so far as cinchona-production is concerned, only preceded Java by a very short time as a producer. The first experiments in the island were made by Dr. Thwaites, the late Director of the Botanic Gardens at Peradeniya, in 1860; but for several years the coffee-planters looked upon his attempts as an amiable craze out of which nothing financially valuable could come forth. Up to 1867 the doctor had positively to beg coffee-growers to accept cinchona-plants for nothing, or to give them a trial on their estates. Several of these gentlemen put down succirubras around their bungalows as ornamental plants, but only one, Mr. R. J. Corbett, set a few acres apart for the culture—a venture which paid him handsomely in after years. In 1866 the first samples of Ceylon-grown bark had been sent to England for analysis, and in 1868 Messrs. Keir, Dundas & Co. sent a ton of *Officinalis* bark, grown on their estate at Loolecondera, for sale to London. This parcel was auctioned at No. 6 Mincing Lane in April, 1868, and realised such high prices that the consignees immediately made ar-

rangements for the planting of 250,000 *Officinalis* trees, while other planters rushed into the culture in an access of the same "cinchona-fever" which broke out in Java two years later. In 1869 there were about 100 acres of land under cinchona in Ceylon, in 1873 there were 1,500, and in 1883 the industry reached its maximum, with an area under cultivation of 64,000 acres, each acre being supposed to carry an average of 1,000 trees.—*Chemist and Druggist.*

TEA ADULTERATION IN AMERICA.

The New York *Freeman's Journal* says:—

The importance of tea as a healthful, refreshing and invigorating beverage is so generally recognized that it is estimated the United States consumes 90 million pounds annually. While probably 60 per cent. of this possesses the qualities mentioned, the greater portion of the remainder is unfit for consumption and deleterious to health, acting as a slow poison, instead of a healthful beverage. The trade is so enormous that there is a great incentive to unscrupulous dealers to deal in cheaper sorts in order to increase profits. They either supply inferior grades, increase the weight by an ingenious treatment with plain blue mud, or furnish refuse leaves that have already been used in the kitchens of the Chinese families, redyed and colored with Prussian blue and soapstone. To such an extent were these deceits practiced that in 1883 the United States Government appointed tea inspectors for the protection of tea importers. These inspectors examine samples of every cargo that reaches this country and certify to its quality before it is landed. This precaution caused a decided improvement in most of the tea consumed here, but far more important results have been accomplished by the efforts of the planters and importers of Ceylon and India teas. The advantages of these grades are now so well understood that Great Britain uses several times as much of them as of the qualities grown in China and Japan, while thirty years ago 90 per cent. of the tea used there came from China.

NEWS FROM FIJI.

(*From our Correspondent.*)

Sept. 29th 1895.

The new Sigatoka Tobacco Company have experienced great difficulty this season owing to the number of caterpillars which have retarded their planting, and spoiled a part of their crop. The native labourers have also been giving trouble. The tobacco I hear is now being harvested and the experts say that tobacco as good as that of Sumatra can be grown. It is sincerely to be hoped for the Colony's sake that this will turn out to be true.

A large Banana Company has been formed. The Nadroga natives have agreed to plant up 500 plants each, about 1½ acre. Over 400 have already signed contracts to this effect and 200 more are expected to do so. The Company agree to buy all approved bunches of 8 hands and over at 7d. a bunch, if the natives carry out their part of the agreement statisfactorily. The Company will swamp the markets with Fiji fruit and should be able to under-sell the Queensland and New Hebridles planters. I think the Company will experience great difficulty in keeping the natives up to the mark. Two Sugar Mills owing to the low prices will be closed at the end of the present season.

The Alpha Tea Estate owing to hurricanes and high price of labour, has been closed.

We have had a cold winter season; up at the Sanatarium the thermometer went down to 43°. I shall most probably be leaving for Ceylon shortly. —A. J. S.

RAINFALL IN LAGALLA, MATALE NORTH-EAST.

I am enclosing memo. of rainfall for October from a group of estates adjoining one another, yet with very different results in daily and month's totals. I believe they are all record figures for this district for the month of October, which is always considered a S. W. month—with the exception of a few days about the 20th, all the rest were regular N. E. rains; Although our neighbours have beaten us by *inches* we are not jealous!

GROUP OF ESTATES, LAGALLA EAST: RAINFALL.

Month	Date	B. Rainfall	L.G. Rainfall	H.W. Rainfall	M.G. Rainfall
October	1	..	·02	·07	·08
	2	..	·04	·04	..
	3	·28	..	..	..
	4	1·38	·40	..	·30
	5	1·12	·64	..	..
	6	·18	·22	..	·38
	7	1·85	1·30	·30	1·25
	8	2·70	2·55	1·80	3·15
	9	3·10	2·00	2·30	3·20
	10	·02	·15	2·50	·06
	11	·60	·40	1·54	1·10
	12	1·20	1·30	..	1·05
	13	1·12	·80	..	..
	14	2·90	2·34	·48	3·25
	15	2·30	2·40	4·00	3·50
	16	·22	2·15	2·22	1·23
	17	3·28	2·50	1 15	1·40
	18	·16	·50	1·53	·10
	19	·05	·67	..	·18
	20	..	·10	..	..
	21	..	·42	·02	..
	22	2·12	1·50	·28	1·15
	23	3·85	2·35	·58	1·50
	24	1·08	·93	1·75	1·00
	25	1·33	·64	2·12	·40
	26	·18	·15	·58	·05
	27	..	·15	..	·15
	28	..	·10	·09	·52
	29	2·12	1·16	·14	3
	30	1·60	1·54	·25	1·53
	31	..	..	1·55	·20
This month		34·74	29·42	25·29	26·76
Previously		103·14	60·74	60·40	59·60
Total for 10 months		137·88	90·16	85·69	86·36

COFFEE IN TAIPING, STRAITS SETTLEMENTS.

(*From Mr. Bowen's Monthly Report, 5th Oct. 1895.*)

Two more applications by Javanese for coffee land were received during the month. While on a visit to Ulu Selama during the latter part of the month I went to see the Arabian coffee gardens of Inche Karrim and Haji Abdul Rahman. This coffee is looking well and the older plants are bearing heavily; Malays, however, will not recognise the fact that to grow coffee successfully the ground must be kept quite free from weeds, etc.

A NEW COFFEE COMPANY.—The Port Dickson Coffee Company (Limited) has been registered by Sanderson and Co., 40, Queen Victoria-street, E.C., with a capital of £20,000 in £1 shares. Object, to acquire a certain tract of forest land of about 2,000 acres, situate in the State of Sungei Ujong, in the Straits Settlements, in accordance with an agreement expressed to be made between D. M. Lumsden of the one part, and this company of the other part, and to carry on the business of coffee (and other products) planters in all its branches. The directors are D. M. Lumsden, R. J. Boyle, A. J. M. McLaughlan, and R. B. Major Qualification, £500 shares. Remuneration to be fixed by the Company.—*L. and C. Express.*

PRÆDIAL PRODUCTS.

THE COMMISSION'S "SCHEME" TO PREVENT THEFTS.

The sound common-sense which the Prædial Products Thefts Commission have exhibited, both in the conclusions at which they arrived and the reasons by which those conclusions are sup' ported, is equally to be seen in the ' Scheme'- which they propound as worthy of adoption, should circumstances call for special protective measures. Although they felt themselves unable to recommend special legislation on the evidence before them, past experience and future possibilities suggested to them the need of being prepared for a contingency which could scarcely be considered remote. If the conditions which obviated the necessity for special measures just now were the prompt and vigorous punishment of offenders, the fall in value of the products most easily misappropriated and greater facilities for earning an honest living, any of these causes may cease to operate at any time, and there would then be a recrudescence of thefts. It is far more satisfactory to consider what should be done in that event now, when a calm and unbiassed judgment can be brought to bear on preventive proposals, than when the public mind is excited by losses arising from impudent and daring thefts. Then, the acuteness of the disorder suggests violent remedies to the sufferers, while the recklessness of some of the proposals inspires in the Government distrust of the suppliants for aid. Here, further, were brought together a body of Officials and Unofficials, whose experience and moderation might not be forthcoming at some future time; and it was very advisable therefore that a scheme, formulated by one of their own number, should be considered and revised by the Commission already appointed. The necessity for another Commission, with the delays inevitable in appointing one and receiving and considering their Report, will not now arise. The Government will have in the scheme which has been put forth the materials on which to proceed if special measures are again demanded; and the thoroughly judicial way in which the *pros* and *cons* of special legislation are stated in dealing with the scheme, should be a further aid to the Government.

The scheme briefly is that all lands or gardens on which cacao or coffee is grown—these being the only two products whose protection cannot be accomplished by ordinary means—should be registered in the Provincial Kachcheri, with full particulars of the land, its estimated produce for the year, and the name of the proprietor or manager. The produce of registered lands can be removed only on permits, books of which in triplicate will be issued by the Government Agent. One of the permits (which will be numbered consecutively) will be given to the carrier; the duplicate will be sent to the Kachcheri for registration; while the original will be kept by the landowner or his representative, but only till such time as a second book is necessary, when the originals of the book previously issued must be sent into the Kachcheri. While the annual estimate of produce, which the Government Agent has power to have revised when necessary, will prevent the squatter from increasing the yield of his patch by appropriation from his neighbours,—the calling-in of old permit books before issuing new ones will prevent the dishonest manipulation of old forms. The inspection of Registers by any one on payment of a small fee; and the power of the Government Agent to inspect produce in transit, and hold inquiries when irregularities occur and prosecute for frauds—are all useful provisions to check undue acquisitiveness in small landowners. But dealers, too, want looking after—perhaps, more so than growers;—and they are to be licensed to buy and sell in specified places, where they are to keep records of their transactions. To them, too, the Government Agent will issue permit books in triplicate, different in form from those issued to growers, but for similar use; and without these permits no produce can be removed from a dealer's premises. As a corollary, no one may receive produce from a grower or dealer without a permit, and thus an effectual check will be provided against the class but for whose ready acceptance of stolen goods, the risks incidental to thieving would be greatly enhanced. As soon as the produce is received, the receiver must forward the permit with his endorsement to the Kachcheri. The dealer is guilty of an offence who has more or less produce than the permit warrants.

These are briefly the main provisions—avoiding details and exceptions—of the scheme; and there can be little doubt of their stringency, and even of their efficacy to reduce, if not to remove, the temptation to steal and to deal in stolen produce. But we must not lose sight of the obstacles they must present to legitimate trade in the case of the ignorant and lowly—those who cannot read or write, and who will have to pay for the smallest service which the sharper can render. The drawbacks have, however, not been overlooked by the Commissioners, who, after admitting that there must be "considerable interference with the ordinary course of trade," proceed to describe the scheme in these terms:—

It will mean registration of all lands cultivated with cacao or coffee, and the annual correction of registers with reference to producible quantities of crop, and frequent corrections with reference to change of ownership.

It will require the filling-in of a somewhat elaborate printed form whenever any produce is disposed of, and this, in the case of a poorly educated peasantry, must necessarily involve some hardship.

In crop time, when protection is most required, the checks provided will be difficult to enforce. So long as a grower has not sold the whole of the estimated produce of his garden, he will have a margin on which he can dispose of stolen produce; and if a man be both a dealer and a grower, he can remove produce on either a dealer's or a grower's permit as suits him best, and in such instances the checks provided may not prove sufficiently effective.

25t To render the scheme effective it will probably be necessary to largely restrict the number of licensed dealers.

It will be difficult to supervise or examine produce in transit, while the large number of permits and of permit books generally in use will open a door to fraud.

It will thus be seen that only under exceptional circumstances would the promulgation o the scheme be justified. Meanwhile, by the establishment of a special Police, in what may be called infected Districts, on the application of two-thirds of the owners, a handy means of relief will be provided—the Government contributing a moiety of the cost of the Police. This remedy, for the application of which means already exist in the Ordinance 16 of 1865, with certain modifications suggested in the Report, should be adopted promptly when thefts become frequent in any District. Meantime, let the suggested amendments of the Police Ordinance be asked for by the Planters' Association or the Planting representative, from Government.

"CEYLON HANDBOOK AND DIRECTORY FOR 1895-6."

In directing attention to our Directory *Supplement*, we have to thank upcountry subscribers to this volume for their forbearance in respect of the delay attending its delivery. The last touches have now been given and the printer's work closes today—so that regular delivery from the binders to outstation subscribers in the order of the register will commence next week; and we trust before the end of the month, "the big book"—for we regret in some respects to say it is the biggest volume ever issued from our press—will be in everybody's hands The mere addition of all the new TEA COMPANIES with their Boards, &c., added considerably to our pages; while the DIRECTORIES altogether are much fuller than ever before. In GENERAL INFORMATION, too, we have never given so much. Of many friends (and perhaps some will become critics of the bulk), each wants some one new thing given and the total result of additions, in the endeavour to be generally useful, is, of course, very great. One wants the Franking Minute in full; another Patent Rules and still another the Labour Laws; while as regards "facts and figures" woe betide us if everything possible, is not available! The PLANTING AND AGRICULTURAL REVIEW has been thoroughly revised and brought up to date. The MAP OF CEYLON in pocket form, adds to the bulk of the volume; and as our collotype portraits of H.E. Sir West Ridgeway have only just arrived, we have decided to add them to the Book as a frontispiece, just as Sir Arthur Havelock's portrait appeared in the edition of 1890-91.—The very first copy of the volume put together (without the final revise) was given to the Governor before his departure, and today we have received an appreciative acknowledgment from Mr. Ogilvy, Private Secretary.

Those who have a proper idea of the labour involved in compiling, arranging and printing, a volume of this kind with its 1,500 to 1,600 pages, will believe us when we say that the limited edition which after all a field like Ceylon can take off, does little more than cover the actual outlay. We should be in pocket probably if we had never touched this year's edition; but we should have known far less about the island, its condition and wants; and done far less to serve the public and to discharge a duty which, undertaken by the present Compiler, since 1863, is expected of us and which we are only too glad to be able to discharge. This, however, is probably the last of our very large volumes. We shall take steps to compress, leave out and reduce certain sections before another issue is called for.

The handy "GENERAL ADDRESS DIRECTORY" for the island will be ready about 1st December.

A STREET AND HOUSE-TO-HOUSE DIRECTORY FOR COLOMBO (by special request) is in course of preparation, most of the information being already in the printer's hand.

CEYLON AND HER PLANTING ENTERPRISE.

TO THE EDITOR OF THE LONDON "TIMES."

SIR,— At intervals during the past 30 years I have, at the cost of much time and trouble, compiled statistics of the planting enterprise of this colony, and have periodically sent you the results for publication. No agricultural industry in the world probably has a fuller or more reliable record than is obtained through the inquiry thus conducted. My last report was dated August, 1893, so that two full years have elapsed, and all interested in the first of Crown Colonies and its most notable Industry will be glad to have the following figures:—

POSITION OF THE CEYLON PLANTING ENTERPRISE AT THE END OF AUGUST, 1895.

	Acres.
Total area of 1,962 plantations and planting properties - - - - -	748,017
Total area of 1,528 plantations in cultivation with 1,469 superintendents and assistants-	379,182
Total approximate extent under—	
Tea - - - - -	304.419
Coffee (Arabica) - - - -	21,634
Coffee (Liberica) - - - -	2,804
Cinchona 4,483.000 trees)	
Cacao - - - -	18,278
Cardamoms - - - -	4,693
Rubber - - - -	634
Tobacco (on plantations) - - -	82
Cotton (on plantations) - - -	133
Grass (cultivated)- - - -	5,330
Total approximate extent of annotto, coca, vanilla, pepper, cloves, plantains, citronella grass, divi-divi, croton, castor-oil, aloes, cinnamon (on the coffee, tea, or cacao plantations)- - - -	7,397
Of fuel, timber, and fruit trees, sapan, coconuts, arecas, nutmegs, kapok (on the tea, coffee or cacao plantations) - - - -	16,000

Without entering into any elaborate comparison, I may mention that in the two years 26,000 acres have been added to the total area under cultivation; but the increased extent under "tea" in the same period is over 31,000 acres, the difference being obtained by a further supersession of coffee (Arabica)—due to the persistency of its fungus enemy, and of cinchona (no longer a profitable product). While there are 8,500 acres fewer under ordinary coffee, the cultivation of the hardier Liberian species has slightly increased; and if an experiment now being made by a planter (Mr. E. E. Green) to import lady-bird beetles from California to clear off the bug (coccus) which is troubling coffee in our richest districts, be successful, it is possible that there may be a fresh departure with our old staple. At any rate, it is satisfactory to know that our export of coffee this year is likely to be very much larger than during any of the previous three years, the comparison so far being as follows:—

COFFEE EXPORTS, JANUARY 1 TO SEPTEMBER 16, 1892-1895.

Total exports	Plantation.	Native.	Total.
from Jan. 1 to Sept. 16, 1895 ..	52,388	3,607	55,995
Ditto ditto 1894 ..	22,201	587	22,788
Ditto ditto 1893 ..	43,652	1,808	45,460
Ditto ditto 1892 ..	34,967	2,030	36,997

The area under cacao (chocolate plant) is also, I am glad to say, slowly hut surely increasing, about 2,000 acres having been added in the past two years. So also with the cultivation of rubber trees, a considerable advance has been made and interest taken in the culture by planters in several districts.

I am thus particular in specifying certain minor industries, before touching on the present overshadowing staple—tea—because it has been my constant endeavour in writing for the planters in our daily Press, as well as in the monthly *Tropical Agriculturist*, to impress upon them the great advantage, wherever possible, of having two or more strings to their bow, and my hope is to see the cultivation of Liberian (and perhaps as well Arabian) coffee, rubber, useful and ornamental timber trees freely extended during the next few years in the Ceylon planting districts.

Nevertheless, I am bound to confess that so far tea is the most encouraging as well as most profitable culture. Although we have now got beyond the *maximum* area ever planted with coffee (280,000 acres coffee in 1878 79, against 304,000 acres in tea in 1895), yet the tea plant is everywhere healthy and vigorous, and crops satisfactory. Nowhere, apparently, can tea be grown more economically than in the favoured divisions of Ceylon, and the enemies of tea can be much more easily fought and conquered than those of coffee. Shortness of the labour supply is occasionally in some parts a difficulty; but if the Indo-Ceylon railway now projected from Colombo to Madura were constructed, this difficulty would be at an end. There is room for a further expansion of the tea area, through private re-

serves of forest land being utilized. The Crown for the present sells very little land. But it may be of interest to mention that, during the administration of Sir Arthur Gordon (now Lord Stanmore), 1883-90, the area planted with tea rose from 32,000 to 220,000 acres, while 84,000 acres have been added in the time of Governor Sir Arthur Havelock, who is just leaving us. The export of Ceylon tea, which was only about 1½ million lb. in 1883, will, for this year, probably exceed 90 million lb.; and I see no reason why this should not be maintained and exceeded for many years to come.

I will not touch on the danger of "over-production" and consequently of prices falling below a paying level; because at present Indian and Ceylon planters are busy trying to conquer new markets for their staple in America and Russia as well as Australasia, where much progress has been made. At the same time I may mention that the ranks of Ceylon planters are very full at present and that there is little room for additions in young men who hope for a career here; although our plantations continue, in my opinion, to be the best tropical agricultural school for young men who are prepared after their training to pioneer (with coffee, cacao, &c.) in the Malayan Peninsula, Sumatra, North Borneo, or Nyassaland, in Central Africa.

A word or two may be permitted as to the more purely native agricultural industry in Ceylon. I calculate that there are some 50 millions of coco-palms growing in regular plantations or small native gardens in Ceylon, covering some 650,000 acres, and yielding an annual harvest nearly equal in value to that gathered from the 300,000 acres of our tea plant. A certain proportion of the "harvest" is exported,—in coconut oil, up to 500,000 cwt.; "copra" and "poonac" (the dried kernels), up to 200,000 cwt.,; coir fibre, rope, and yarn up to 170,000 cwt.; in coconuts (10,000,000), as pulled or with the husk off; and in a new and fast-expanding industry in "desiccated coconut," six to seven million lb.—but a large, perhaps the larger, proportion is consumed for food and domestic use otherwise by the people of the island, apart from the large and unfortunately growing quantity of arrack (the whisky or brandy of Ceylon) prepared from the sap of a large number of palms set apart for that purpose. Of other palms (Palmyra, Kitul, and Areca chiefly) and fruit trees in great variety, I count the Sinhalese and Tamils of Ceylon have over 300,000 acres planted, and most yielding crops, as additions to the food supply and, in some cases, exports. Of our famous ancient spice—cinnamon (which was carried from Ceylon and sold in Rome in the time of Augustus Cæsar for the equivalent of £8 sterling per lb.)—there are still about 35,000 acres planted in Ceylon, the annual exports of the quills and chips keeping in excess of 2½ million lb. This industry is in Ceylonese (chiefly Sinhalese) hands. Cardamoms, pepper, cloves, nutmegs, and some other spices claim more attention from the European planters; but the cultivation of citronella and other grass for essential oils is solely done by the natives, as also, of course, the great paddy, or rice-growing industry in Ceylon. Since the abolition of paddy rents from January 1, 1893, this industry is now "protected" (the Cobden Club Committee consenting) to the extent of a Customs duty of 29 cents per bushel on all rice imported from India; but the result so far has not affected our imports (*), which are as follows:—

Rice Imports, 1892-94.

		Bushels.
1892..	Imported from India ..	7,282,411
1893..	" " ..	7,447,376
1894..	" " ..	7,556,505

Finally, I may mention that the trade in our only mineral of commercial importance, plumbago, is not very prosperous, though we continue to export between 300,000 to 400,000 cwt. of it, largely if not chiefly, to the United States, London coming next, while France and Germany have begun to take increasing quantities indirect shipments. Ceylon has from time immemorial been famous for its precious stones—rubbies, sapphires cats'-eyes, and moon-stones—and these continue to be freely found, the digging and selling being in native hands and the proceeds largely carried away by visitors or despatched in registered postal packets.

May I wind up by saying that the two notable material facts in the history of Ceylon during the past 15 years are—(1) the rise of the tea-growing industry from 9,000 acres planted in 1880 to over 300,000 acres in 1895; (2) the immense growth and ever-increasing expansion in the tonnage and trade of the capital, Colombo. The total tonnage of the port in 1880 was 1,300,000; while last year the aggregate (inwards and outwards as before) had reached 5,328,000 tons. If, in place of being shackled with a long list of Customs burdens and restrictions, Colombo were to get some of the fiscal advantages of Singapore, or even Bombay, it would more and more rapidly become the great port of Southern Asia, and such increase of prosperity for the port and city would be further confirmed and extended if it were directly connected by an Indo-Ceylon métre-gauge railway with Southern India, as orginally projected by the late Duke of Buckingham and Sir William Gregory.

I am, Sir, yours repectfully,

J. FERGUSON, of the *Ceylon Observer* and *Tropical Agriculturist.*

Colombo. Ceylon, Sept. 19.

* If it should be said that the imports are for immigrant coolies, it must be answered that the total consumption by them cannot exceed 2½ million bushels, while local and imported rice competes in every bazaar in the towns and throughout the island.

INDIAN PATENTS.

CALCUTTA, OCT. 24TH.

"For Improvements in Stoves or Apparatus for heating Air".—No. 321 of 1895.—Samuel Cleland Davidson, of Sirocco Engineering Works, Belfast, Ireland, Merchant, for improvements in stoves or apparatus for heating air.

Specifications of the undermentioned inventions have been filed, under the provisions of Act V. of 1888:

"For Improvements in Apparatus for Rolling Tea Leaf and the Like".—No. 238 of 1895.—William Jackson, of Thorn Grove, Mannofield, Aberdeen, North Britain, Engineer for improvements in apparatus for rolling tea leaf and the like. (Filed 11th October 1895.)

"For Improvements in Apparatus for subjecting Materials to the Action of hot Air."—No. 257 of 1895.—William Jackson, of Thorn Grove, Mannofield, Aberdeen, Scotland, Engineer, for improvements in apparatus for subjecting materials to the action of hot air more especially intended for use in drying tea leaves and other produce—(Filed 11th October 1895.)—*Indian and Eastern Engineer*, Nov. 2.

MARVELLOUS VICISSITUDES OF AN ISLAND.

TRY AND TRY AGAIN.

Away to the South of Asia and almost attached to the great empire of Hindustan, lies the ancient isle of Lanka.

Thousands of years ago,—aye, thousands of years,—perhaps before our British ancestors in paints and hides attired, unsuccessfully resisted the Roman invaders, this island had intercourse with the Chinese in the Far East, and the Arabians in the West. 'Tis hard to name a date so far remote that some of the arts, say pottery and architecture, were unknown to its people.

The Americans, who are the heirs of the ages, are not really the inventors of many things which their skill and intelligence have greatly improved, cheapened and utilized. The Chinese, who may have been as advanced five thousand years before the beginning of history as they are to-day, and if left to themselves would be five thousand years hence, were acquainted with the compass and the cantilever, with powder and printing centuries before Columbus was born.

The ancient capital of Lanka, whose gigantic ruins are now being uncovered in almost impenetrable jungle, was founded and with it the Buddhist religion in the island some five hundred

years before our Christian era. The ruins of its vast temples attest the skill of its ancient builders. A sacred tree brought over there from India when a small plant, is still growing, and its history has been reguarly recorded for nearly two thousand five hundred years, by the devoted priests of a Temple dedicated to it. It is now the oldest historical tree in the world.

But Lanka was known and its products utilized at an earlier age when a still more famous temple was built. I mean that of Solomon.

———"That uxorious King,
Who beguiled by fair idolatresses,
Fell to idols foul."

If in the recently discovered African mines we have found the source of Solomon's immense stores of gold, in Lanka we recognize the source of his ivory. So skilful, too, were the dentists of those early years, that the ivory trunks were extracted from the live elephant; and so effectually were the molar roots drawn, that unlike the elephant of African India, Lanka's greatest beast has never since developed a large tusk, but has to be content with a small protuding stump, which like Monbodda's tail in man, merely indicates what has been.

Passing over two thousand years or so, a short time in the life of those eastern countries, during which Lanka was ruled by its native King, or by Invaders from the adjacent continent, and while its Gigantic irrigation works, now mere monuments, were being constructed, we find the Portugese ruling the island during the 16th and 17th centuries. Then came the Dutch; until about the beginning of the 19th century, the English gained possession. The descendants of the Portugese and Dutch are still numerus in the land.

About 1825, while Lanka had few Englishmen besides the Civil and Military Servants, an enterprising soldier introduced the cultivation of coffee. His example was soon followed by his brother officers, and within the next ten years a large tract of land carried the fragrant bean.

The success of the young Englishman attracted capital to the island, and hundreds of coffee gardens were planted during the following thirty years. The island's seaport became a place of great importance, and the planters a numerous and influential body. Roads were opened up, branching between ranges of lofty mountains into all the lovely and fertile valleys on whose slopes the grand primeval jungle gave way to tho coffee tree.

Soon the railroad took the place of the road with its thonsands of bullock carts.

Between 1865 and 1875 the exports of coffee ran from 750,000 to 1,000,000 cwt.; giving employment to a quarter of a million of coolies (native labourers), or with their families perhaps finding sustonance for seven hundred thousand people.

About 1868 or 1870 a curious looking powder was observed on the leaves of the coffee plant in many parts of the island. At first little notice was taken of it; then it became a curiosity, and in time the attention of a famous scientific authority —the Conservator of the island's beautiful botanical garden—was attracted to the phenomenon. After close observation the oracle spoke, and his utterances were a grave warning; the stranger was pronounced to be a dangerous and insinuating parasite, which penetrated into the cells of the leaves and prematurely destroyed them while their functions in assisting the trees to mature their fruit were still unperformed.

At first little heed was given to the sage's opinion. Manuring was resorted to and under the influence of good prices, hope, and faith, with an occasional note of distrust, which when expressed was immediately hooted down, ruled until about 1876-78. By this time it was evident to many that the weaker portions of their gardens were succumbing to the attacks of the parasite. Manuring no longer produced its old results; crops estimated to be good in their early stage gradually dwindled during the two months while the berries should have been maturing, until actual out-turn greviously disappointed the poor planter.

Years before this, one gentleman of a botanical turn and a rare gift of foresight, had introduced the cinchona and other tree into Lanka. He planted fields of those, and soon found they were well adopted to the soil and climate and could be cultivated most profitably.

His example was generally followed so far as cinchona was concerned. Hundreds of millions of those trees were put out between 1870 and 1880. Those who planted them first reaped a splendid harvest, as the bark from which quinine was extracted sold readily at from three shillings to ten shillings per pound. Great fortunes were anticipated by hundreds of planters—single trees of the best qualities being valued at thousands of pounds, as seed bearers.

The exports of bark went up by heaps and bounds, until supply exceeded demand, when prices fell badly. Quinine fell from eighteen shillings per ounce to two shillings, and even to ten pence. Bark from a five shilling average per pound to five pence, and soon after became almost unsaleable. Thus another grevious disappointment befell the poor struggling planter. With household bills unsettled, and labourers' wages in arrear, the interest of an ever swelling mortgage became due with ruthless regularity every six months. Ruin and sequestration were the fate of many, while others strove bravely by hard work and strictest economy to stave off the evil day.

Meantime, attention was directed to that other plant which our far-seeing friend had introduced. Experimentally by many, and boldly and extensively by a few, its cultivation was attempted. Early in the eighties it was recognized as a useful friend which might help many whose properties lay in the Zone, to which alone it was then thought to be adapted. Gradually, with fear and trembling rather than faith, it was tried higher up in the mountains and further down the vallies—and still its capabilities did not fail.

By 1885 it was known that those who had planted it during the seventies were surprised at their success; and it gradually dawned upon all that from the sea level near the equator to winter snow about thirty degrees north, and seven thousand five hundred feet elevation, one variety or another of this Heaven-sent plant would grow, flourish, and pay handsomely. The moist climate of Lanka was found to be particulary suited for it. Cheap labour helped greatly and rapidly; falling exchange was a God-send to a country with a silver currency.

Other countries slow to grasp improvements, wedded to old customs, and not over cleanly habits, had been growing this plant and exporting products for centuries. Among them it was a family industry, as weaving of woolen and linen garments was last century in England and Ireland. The children plucked the leaves. The elders rolled them by hand and dried them over charcoal, as, and when, other household matters permitted.

In Lanka it was speedily recognised that machinery supplied the most economical and only cleanly way of manufacturing the article. It was universally adopted, both for rolling the leaf and firing the product.

In 1893 Lanka exported 1,000,000 pounds and in 1895 it will export 94,000,000 pounds of this useful, refreshing and grateful household need.

Great Britain now uses the machine-made product of Lanka and the adjoining continent of India almost exclusively whereas a few years ago the hand-made article had complete possession of every household. Other countries, chiefly Australia, Russia, and America including Canada, which took only four and one half million pounds from Lanka in 1891, will this year take seventeen, perhaps eighteen, million pounds.

Cleanliness is a factor in favour of the machine-made product, as is also economy in time and money. A cup can be made in half the time and with half the quantity of raw material required when the hand-made article is used.

Lanka is the ancient name of Ceylon, and the other plant of the far-seeing planter is the tea tree, from the young succulent leaves of which the now famous and almost universally drunk Ceylon tea is manufac-

tured. We would prescribe a soothing cup of its extract to all whose brains are wearied by business troubles and to the many whose digestion has been weakened by the too stimulating extract of coffee's fragrant bean. W. MCK.

LABOUR CONTRACTORS IN MADRAS.

We have before us the Draft of an Act which it is proposed to pass in the Madras Council, to provide for the licensing and registration of contractors who supply labourers to estates in the Southern Presidency. One of them is the Bill as prepared by the Advocate-General; the second embraces the alterations which the United Planters' Association of Southern India suggests shouldj be incorporated in the Government measure. We are not sure if these alterations are "amendments" in the strict acceptation of the term; but it would not be wise to decide hastily on that point, without knowing something of the origin of the measure, and the reasons which have weighed with the planters in suggesting the alterations. Has the Bill been prepared at the instance of the planters, for the protection of their own interests, or has it been devised by the Government for the protection of the labouring classes from Recruiting Agents, whether of their own nationality, or strangers to the country? The superiority of one Bill over the other must depend on local circumstances on which we cannot pretend to be fully informed; but speaking generally, and subject to correction, we should say that the provision made by the Advocate-General for the registration of licensees, which the revised Draft omits, is a wise one. It is scarcely business-like to issue licenses without keeping some record of them; and if a Register is to be kept, it would be obviously useful that it should have legal recognition, both for purposes of reference, and as a means of verifying the license in the event of suspicion attaching to it, either as a whole or in respect of alterations in it. The chief difference between the two Drafts lies in the provision for a Register, and in the absence of such provision.

The Preamble sets forth the expediency of licensing [and registering], contractors who hire labourers for service on tea, coffee, and cinchona estates, and of preventing unlicensed persons being employed in supplying gangs to work on estates. The interpretation clause is very full and precise. and defines such terms as 'planter' (to include owner and manager), 'estate', 'gang', 'contractor', and not least 'advance' which means " any money or thing given to any contractor, as a prepayment, in whole or part, on the consideration for his contracting to supply gang labourers, and includes any release of a balance due on a previous contract, when such release is by mutual consent treated as an advance." That strikes us as a very satisfactory definition, and one which might with advantage be incorporated into our local Labour Law, to guide the Courts in dealing with the indebtedness of coolies to estates and *vice versa*. Indeed, it may be a question whether we should not have a similar Act here, whereby the Kangany might be licensed and registered as a means of increasing his usefulness and limiting his readiness, sometimes, to flit from one estate to another. That however is a matter on which we should like large employers of labour to have their say, through the Press or in District Associations, so that the Parent Association might decide whether to approach the Government or not with a view to legislation. Probably, the reason of the disinclination which Planters show to enter into written contracts with labourers, may also militate against the forging of any shackles for the Kangany, lest his conservative mind should rebel against the change. And, to 'leave well alone' is a motto which has much to recommend it in this age of unrest and revolution.

But to proceed, the Bills we are noticing contemplate the restriction of the recruiting of labour for estates to persons duly licensed. The license is to be obtained from the Sub-Magistrate within whose jurisdiction the applicant resides; but we prefer the "may be granted" of the original Bill, to the "shall be granted" of the revised, because that would imply some discretion in the granting of licenses; and the withholding of a license by the Magistrate from an applicant of known bad character would be an advantage, rather than the reverse, both to the labourer and the estate. Any person acting as a labour-contractor without a license would expose himself to a fine of R5 for every day he so acts, and any planter who enters into a contract with an unlicensed person would similarly incur a like penalty for every day he so employs the man. Each license is to run for 12 months, but may be renewed, the renewal being recorded on the license under the signature and seal of the renewing officer; and it must contain a correct abstract, according to a prescribed form, of every contract entered into by the licensee. The abstract is required to be both in English and in the Vernacular which the Maistry understands, to be signed by both planter and contractor, and to contain particulars of estate, district, number engaged, duration of contract or specification of work, amount payable and how, and amount of advances. The license restricts the contractor to work within the jurisdiction of the licensing Magistrate, but if the coolies be engaged to work on an estate outside that jurisdiction, the contractor is bound within a week (a month in the revised Draft) to produce the license before the Sub-Magistrate, within whose jurisdiction the estate is situated, to have his signature and seal to the abstract. So with regard to all alterations and modifications of the contract. The Bill strikes us as both well-conceived and carefully prepared; and if a trustworthy class of contractors come to be licensed, there should be no reason why we (in Ceylon) should not ask for such an alteration of the law as might enable such licensees to recruit labour for our estates too, on terms and conditions to be hereafter arranged. Whether this be thought advisable or not, the connection between ourselves and Southern India is intimate enough to explain our interest in the proposed legislation.

TEA DRINKING IN CHINA.—In a paper on "Work in Heathen Homes," by Miss Horne and Miss Miller of Amoy, read at one of the L. M. S. Centenary meetings in London recently the writer says :—

Again, a rule of Chinese courtesy is that a guest must be offered tea, or a concoction of hot water poured over a Chinese fruit mis-called "tea." The lady worker inwardly groans as she hears the order given by the mistress of the house to prepare tea; in vain does she say there is no need to make tea, she has lately eaten, she would rather they sat down and listened. Their duty of politeness is to offer her tea, and tea she *shall* have. (Laughter.) So she has to endure the fumes of wood smoke, and then to politely taste the syrupy beverage, after which the household can spare a little attention to listen to the "doctrines."

TEA PIONEERS IN ENGLAND: A FAMOUS FENCHURCH-STREET FIRM.

(*Abridged from the London "City Press."*)

From what was gathered at an interview the other day with the head of the well-known firm of tea merchants, Messrs. Davison, Newman, and Co., of Fenchurch-street, the question whether we drink good tea (writes a representative of the *City Press*) is open to much discussion. A cheap article nowadays sells, says the head of the firm, and thereby becomes popular. But whether the policy pursued by the community is one to be commended is open to grave doubts. Competition is the propelling agent of the age of merchandise, and to a large extent it is responsible for the many inferior kinds of goods that now glut the markets. The responsibility always rests with consumers, for the supply is made according to their demand.

The tea house of Messrs. Davison, Newman, and Co. is the oldest-established in this country. It was founded in 1650. when tea was "worth its weight in gold," by Daniel Rawlinson, the father of Alderman Sir Thomas Rawlinson, who was Sheriff of London in 1687, and Lord Mayor 1706. The "Annual Register" gives the following particulars of the founder of the firm: 'Daniel Rawlinson, merchant, baptized 1614, died 1679." There is a fine portrait of him in the Hawkshead School. He rebuilt the latter in 1675. A monument is erected to his memory in St. Dionis Backchurch, Fenchurch-street. Samuel Pepys and Daniel Rawlinson (founder of the firm) were friends, and seeing how near to one another they lived the fact is not surprising. The diarist frequently refers to "Dan Rawlinson." Mr. Battersby (*vide* Pepys' Diary, p. 308, August 6th, 1666) informs Pepys that "after all this sickness, and himself (Rawlinson) spending all the last year in the country, one of his (Rawlinson's) men is dead of the plague, and his wife, and one of his maids sick and himself shut up." Whereat Pepys says that he was "mightily troubled." On August 9th, three days later, we learn from the same source of the death of Mrs. Rawlinson, the continued illness of the maid, and the fact that Mr. Rawlinson had been forced to quit his house. On September 8th, 1667, Mr. Pepys relates how he met Mr. Rawlinson in Fenchurch-street, the latter having been looking over the ruins of his premises destroyed by the Great Fire of the previous year.

The firm, which carries on business today almost on the same lines as it did in the days of that much-maligned monarch Charles II., is justly entitled to the term famous, for it is one of the first historic houses of business in the City, The business was commenced in Fenchurch-street 250 years ago, and was conducted at the same old place until 1890, when the successor was perforce obliged to remove. From No. 44 they migrated to No. 57, but deep was the regret of the firm, and perhaps quite as deep was the regret of their old customers, and everybody else, at the removal of such a grand old landmark. But it was compulsory owing to City improvements. The establishment is split up through it, however, for, while the retail business is carried on at the new address, the wholesale business is done at the large five-storey warehouse in Creechurch-buildings, Leadenhall-street. In 1763 the firm was known as Rawlinson, Davison, and Newman. In 1777 the style Davison, Newman & Co. was adopted, and is retained to the present day. In 1777 Monkhouse Davison and Abraham Newman admitted into partnership three of the clerks, who put various small sums into the business, no amount, however, exceeding £500; a Mr. Thwaytes invested £500. These small sums of money qualifying for partnership in a well-established firm whose capital was £80,000 seems ridiculous, but the fact is nevertheless, true. In 1792 the capital increased to £196,000. Our representative was privileged to inspect the original books and documents and many other interesting data of the old firm. In the "Annual Register" for 1799 we read the following: "Died this year, in Fenchurch-street, Abraham Newman, Esq. He was one of the richest citizens of London. . . . . He acquired £600,000. . . . . So forcible was his habit that he went every day to the shop and tea his mutton chop at two o'clock . . . . with his successors. To each of his daughters he left one hundred thousand pounds." He retired some years before he died. Monkhouse Davison died in 1793. The two partners were buried in one vault. The memorial tablet still exists in the church of St. Olave, Hart-street. Time eventually carried off all the original partners and also the two clerks, leaving Mr. Thwaytes the master of the whole concern. He realized an enormous fortune, for, after providing pretty comfortably for those who knew him best, he bequeathed £40,000 to the Clothworker's Company. The interest on £20,000 of that sum we understand, is now paid annually to the blind by that company. The following extract is taken from a book called "The History of Signboards":—"At 44, Fenchurch-street, a very old-established grocery firm still carries on business under the sign of the "Three Sugar Loaves." The house presents much the same appearance it had in the last century, with the gilt sugar loaves above the doorway, and is one of the few places of business in London conducted in the ancient style. The small, old-fashioned window-panes, the complete absence of all show and decoration, the cleanliness of the interior, and the quiet order of the assistants in their long white apron betoken the respectable old tea warehouse, and impress the passer-by with a complete conviction as to the genuineness of its articles." This description, of course, referred to the old premises. Over the new premises, 57, Fenchurch-street, the identical old shop sign is still to be in the shape of a crown supporting three gilt sugar-loaves.

The connexion enjoyed today by Messrs. Davison, Newman, and Co. is of a nature fully commensurate with the honorable records of a prosperous commercial career of nearly two and a-half centuries. Their mercantile relations are of the most influential order, many of their customers having dealt with them for generations. This reflection (continues our representative) brings us back to the abstract question—tea. The late Sir Andrew Clark was no friend of the teas hailing from any plantations but those of China, our representative was told. In his lecture to the students at the London Hospital, the late *doyen* of the medical profession said:—"If you want to have, either for yourselves or your patients tea which will not injure and which will refresh, get black China tea."* It is the opinion of the principal that the tea which comes from fields not Chinese, and for which there is now such an enormous public demand, is not the best friend of the tea-drinker. Tea "critics" say that it is too pungent, and what money is saved in buying it for home consumtion is lost in another way, for, by all accounts, the drinker of such tea can seldom make sure of retaining a healthy nervous system. Unfortunately the people are so wedded to cheap and strong teas other than Chinese that they do not relish the more delicate importations from the Flowery Land. India and Ceylon send over good tea as well as indifferent tea, but tea specialists, like the successors of the City's earliest firm of tea merchants, would never recommend the choicest products of those places in preference to those of China.* Pure tea, pure coffee, and pure sugar are necessary to health and happiness. Among the working classes of the community it is generally believed that cheap, and thereby impure, stuff is only sold for them, and that the higher-priced foods belong to the world which is not theirs, the world of the "upper ten." But will it surprise them when they hear that many of the nobility today insist upon having tea at less than 1s 6d per pound? Will it surprise the readers of the *City Press* to hear that while it is possible to get at this establishment fine old-fashioned China tea at 2s 4d per pound, many of the best country families will not buy it, preferring the cheap Ceylon instead?† The finest tea that is imported into this

* Sir Andrew Clark recanted this opinion afterwards and pronounced good Ceylon tea the best he ever tasted.—ED. *T.A.*

† This just shows how behind the age the Firm's views are.—ED. *T.A.*

country is the pure Souchong—Sir Andrew Clark's favourite.*

It is a "tradition" that it was this old historic house which exported to America those celebrated chests of tea, which, being sunk in Boston Harbour, gave rise to the war of American Independence—hence our previously unexplained heading.

THE DARJEELING-HIMALAYAN AND OTHER MOUNTAIN RAILWAYS.

The Report of the Directors of the Darjeeling Railway for the half-year ending 30th June 1895 shows that the revenue of the line continues to increase, and with the expansion of the tea industry the receipts must go on improving, says the *Pioneer*, which takes a rather different view of the situation from Mr. Waring. For one thing, the Government gets the half of any profits above 5 per cent. Our contemporary continues :—

As mountain lines to Simla and Mussoorie have already been projected, and others are in contemplation, it may be well to consider the causes to which the success of the Darjeeling Railway is attributable, as the experience gained in that concern should be a valuable guide in forming a judgment as to the feasibility of other schemes of a similar nature. The total length of the Darjeeling Railway from Siliguri to Darjeeling is 51 miles, of which 7 miles in the Terai are practically level, and the remainder comprises the mountain section. The gradients of this latter vary considerably from 1 in 23, which is the steepest, to 1 in 30, or more; and the sharpest curve is about 60 feet radius. The total rise from Siliguri to Ghoom station (3½ miles from Darjeeling) is some 7,006 feet, and the actual length of the ascent from the foot of the hills is 40 miles. From Ghoom there is a fall of some 200 feet into Darjeeling. The cart-road, which is utilised as far as possible, is a good metal road 25 feet wide, and had the lower section of it been as well laid out as the upper, there would have been considerable saving in the cost of the construction of the Railway. * * * It may be as well to consider here if any direct advantages accrue to Government from conceding the use of an important mountain road for the purposes of a railway. In the case of the Darjeeling line the agreement between Government and the Company is, we understand, as follows :—The upkeep of the road is to be paid for by Government and the surplus earnings of the Railway over 5 per cent are to be divided equally between the two parties. Hence we find in the accounts under notice a sum of R30,365 entered as the Government share of the excess profits. This may be reckoned as a pure gain to the State. Instead, therefore, of discouraging the construction of railways on mountain roads, it would appear the Government policy should be to make it a condition that such roads should be utilised where possible. Whether a railway is made along them or not, such roads must be kept up at the public expense, but if it becomes profitable to utilise them for a line of railway, the State is both a direct and indirect gainer. It is argued that a good road may thus be converted into a bad railway, but such is not the experience of the Darjeeling route. It is true the road is hampered to a certain extent by the existence of the Railway, but as the rates of carriage on the latter are less than half of that by bullock-cart, while the speed is five or six times greater, it follows as a natural consequence that the road traffic becomes insignificant and the necessity for a first-class road thus disappears.

The success of the Darjeeling line, both on account of its public utility and the profitable returns it gives to the shareholders (and it may be said to Government), should result in more attention being directed to the feasibility of other schemes of a similar nature. In the Dooars, where the tea industry is expanding so marvellously, there is a great opening for light railways: and the Bengal-Dooars line, which has so recently been opened, is already showing signs of becoming a highly remunerative enterprise. A mountain line up the Teesta Valley is discussed as a possible scheme of the immediate future, and as a good metalled road exists we believe to Kalimpong in Sikkim there should be little difficulty in promoting a scheme of this kind. There is a large tea area to be served; besides which the Tibetan trade follows this route. In other directions there are promising schemes to which promoters of light railways might well direct their attention. In the vicinity of Murree there are 12 or 13 depots in which British troops are located for 8 months in the year, and the cost of carriage for provisioning them alone must be a considerable item. A light railway from Rawalpindi to Murree would serve these depôts, and would afford Government the means of transporting troops rapidly to the plains in an emergency. Simla and Mussoorie must also sooner or later be provided with railway facilities. If the same concessions were given as in the case of the Darjeeling line, doubtless companies could easily be formed to carry out the schemes. It is imperative that the public roads should be utilised for all these mountain lines, as in no case will it probably be found possible to build a railway on a separate alignment except at a prohibitive outlay.

TREE-PLANTING IN SOUTH AFRICA.

The regulations for a tree-planting prize competition are as under :—Three prizes of amounts not exceeding £500, £300, and £200, for first, second, and third prizes respectively, are offered by the Government for the best plantation of forest trees. The award will be made in May, 1901. Persons intending to compete should give notice in writing of their intention to the Secretary for Agriculture not later than May 1st, 1896. The plantation, excluding roads, fire-paths water-courses, rocks, and other ground unsuitable for planting, shall contain not less than 100,000 forest timber trees planted or sown in one block, which, however, must be subdivided into compartments by fire-belts; if the block be shaped as a band or shelter belt, its narrowest part shall be not less than 100 yards. The trees shall be spaced at an average distance of not less than 3 ft. by 3 ft. (equal 4,840 per acre), not more than 6 ft. by 7 ft. (equal 1,037 per acre). Trees planted sparser than 1,000 per acre, when inspected by the judge, will be excluded from the competition. The plantation must be clean and regular, the trees evenly distributed, and efficiently protected against danger by fire or grazing.—*Home paper.*

BRITISH CENTRAL AFRICA.—The *Gazette* of Sept. 1st is to hand by the French mail, but there is not much in it of outside interest, save that lions are prowling close to the capital, Blantyre, and alarming the residents with their nightly howling. Here is a paragraph referring to a proposed railway :—

Mr. Grieve Macrone reports very satisfactorily on the progress he is making with his railway survey. He hopes to have his work completed before the rains set in, and we shall then for the first time be able to judge of the feasibility of a line to be brought up from Chiromo to Blantyre along the Cholo plateau.

* The utter ignorance shown in speaking of pure "Souchongs"—a common China tea brand—as the "finest," can only make real authorities on tea smile.—ED. *T.A.*

VARIOUS PLANTING NOTES.

PLANTING AND LIFE IN NYASSALAND.—We direct special attention to the letter of Mr. J. W. Moir of Lauderdale estate, answering certain criticisms directed to us by a Ceylon visitor to British Central Africa in the early part of this year. As we said at the time, experience on the coast and up the river is very different from that of the resident at Blantyre and in the coffee hill region. Mr. Moir's life statistics are eminently satisfactory; and so are his rainfall and temperature tables,—given on pp. 353-354—as to the suitableness of the hill country for coffee growing.

TEA CULTIVATION AND THE OLDEST TEA IN CEYLON.—It may surprise a good many to find that whereas in 1892-93, only 23,000 acres were added to the total in tea in Ceylon, in the past two years (1894-95) the total of land planted with the staple is 32,000 acres.—We are accustomed for each new edition of our Handbook to get a report on the oldest field on Loolecondura (now in its 27th year). Mr. Bonner, the present manager is good enough to respond to our requests as follows:—

Loolecondura, Sept. 21.

To the Editor, *Ceylon Observer*.

DEAR SIR,—In reply to your letter *re* the Oldest Tea field on Loolecondura. This field is still very vigorous though one or two patches on the ridges are decidedly poor. The yield 1st January to 31st August is at the rate of 382 lb. per acre and though not so good as 1893, this may in a great measure be accounted for by its being only recently pruned.—Yours faithfully, C. E. BONNER.

LADY BIRDS AND COFFEE IN HAWAII.—We take the following important paragraph—important to Ceylon Planters with coffee—from *the Hawaiian Commercial Journal*, Augt. 13th:—

What has given the Kona people more encouragement than anything else is the rapid disappearance of the blight, which in the early part of the season threatened to destroy the whole crop. Tho ladybird recently introduced in the district did not begin operations on the coffee trees until about six weeks ago, confining themselves at first to the guava bushes. They lay dormant all winter and when the warm weather set in, appeared in small numbers on the guava trees. When they first appeared the planters feared they would not spread to the coffee trees but a few weeks later when the warmer weather set in myriads of the bright-winged strangers swarmed the coffee trees clearing them completely of all blight. The result will be that whereas the whole crop was threatened with total destruction more than half a crop will now be saved with the prospects for future seasons exceedingly bright.

RUBBER CULTURE.—Not alone in coffee—and Liberian coffee especially—are our Straits neighbours leading the way; but also it seems in respect of the cultivation of rubber. We have had a call from the proprietor of a plantation in Lower Perak on alluvial riverside soil, where there are either planted, or about to be planted, some 500 acres of Para rubber. The climate and soil ought to be as good for Para, as its native Amazonian region, and we look forward with much interest to hearing from Mr. Baker of the progress of his clearing and his eventual harvests of rubber.—There has, however, in the past two years been a good deal done in Para rubber in Ceylon, especially in the Kalutara and other lowcountry districts. The Conservator of Forests does not tell us much of his Sabaragamuwa plantations, but they appear to be growing all right. Perhaps 1,000 acres altogether are planted with rubber trees in Ceylon.

MEM FOR PLANTERS.—Never add lime to a manure containing nitrogen; and when lime has been applied to the land, do not use such manures until about three weeks afterwards.—*The Agricultural Magazine.*

PLANTING ENTERPRISE IN NORTH TRAVANCORE.—The following is from the *Madras Mail*:—

WE PUBLISH FROM THE *Ceylon Observer* AN interesting account of the lands which have been bought in the Kanan Devan District by Messrs. Finlay, Muir & Co. from the North Travancore Company. We understand that it is the present intention of the proprietors to put 10,000 acres under tea within the next four years. Mr. H. M. Knight is the General Manager, and the property will be opened out under him in a throughly practical manner. We should like to see as vigorous a spurt in other planting districts.—*M. Mail.*

HYDRAULIC MORTAR.—May be obtained by mixing brick dust with quicklime. Blocks of such mortar half an inch in thickness, after immersion in water for four months, bore without crushing, crumbling or splitting, a pressure of 1,500 lb per square inch. It is asserted that the use of mortar of this composition largely prevails in Spain, and that it is found here to be superior to much artificial cement in the construction of drains, tanks, or cisterns. The proportions used are one of brick dust, one of lime, and two of sand, mixed together dry, and tempered with water in the usual way. There must be many occasions in which you would find this new mixture useful. It is not known to me if it will absolutely set under water, but probably a somewhat larger proportion of brick dust might ensure this. It seems reasonable to think so, for we know that artificial cements are made almost entirely of burnt clay and lime. Very little experimenting would be able to decide your local architects and engineers on this point. It may well be recommended to your Director of Public Works to make some trials in the direction mentioned.—London *Cor.*

THE EXPORT OF CEYLON TEAS.—The figures given in the Chamber of Commerce Price Current this week, relating to the exports of Ceylon tea to all parts of the world, are more than usually interesting, and show a most gratifying increase in the output of our staple (to 26th Sept). The American shipments have risen from 163,410lb. to 272,290lb. The export to Australia exceeds that of last year by 1,487,284 lb. But by far the most interesting increase is shown in the figures relating to the Russian market. The importance of that country as an outlet for our teas has long been recognised, and an energetic campaign has been carried on there against merchants' and dealers' prejudices in favour of China tea. From January to September, 1893, the direct shipments of Ceylon tea to Russia were 15,410 lb From January to September, 1894, there were 33,328 lb. The shipments up to September 26th this year, however have been 206,895 lb., an increase of 650 per cent! This is a noteworthy rise, and one we are heartily glad to see. For it we owe thanks undoubtedly in a very great measure to M. Rogivue, who has done good work on behalf of our staple; but to Mr. Lampard, the latest addition to the ranks of our local tea-buyers, credit is also due, for since his arrival in Colombo he has been helping to develop foreign markets, and in regard to Russia we hear that he is now sending off something like fifty tons of our tea a month. 27 tons were shipped by him in the "Vindebona" the other day, and his shipments to Russia this month will be fully up to fifty tons. This is good news for our planting community, and we are glad to draw attention to it and hope to see the increase maintained.—Local "Times."

[Mr. Lampard is as strong as other large tea-buyers here in the belief that the trade direct with Russia, Australia, America, etc. could be increased manifold were the absurd Customs restrictions which keep Colombo in swaddling clothes removed.—ED. *T.A.*]

"COCONUT BUTTER."—Mr. John Hughes' letter on this subject given elsewhere will be read with general interest: the new industry even if confined to America ought to lead to a large and growing demand for coconut oil, so benefiting Ceylon producers.

NEW PRODUCTS.—We attract attention to the useful and interesting letter of R. M. T.; we are very pleased to have the information he gives about greater attention being paid to new products. There is plenty of room for them in Ceylon without going to India.

LADY BIRDS FOR COFFEE BUG, &C.—We are glad to learn that Mr. G. H. Green of West Haputale is likely to supplement his brother's attempt at importing "lady birds" from California, by trying whether a supply can be got from Queensland. We heartily trust both these spirited ventures may be highly successful.

INDIAN TEA COMPANIES.—Mr. George Seton has published in tabular form the results of the 1894 season's working of 40 Indian tea companies registered in London, says the *Financial Times*:—The total share capital involved is £3,734,620 and on this sum an average dividend of 9 per per cent. was paid, £335,970 being distributed out of total receipts amounting to £1,687,767. The 40 Companies have reserves and balances in hand equal to 9¼ per cent. of their entire capitals, the Jorehaut (which pays 20 per cent.) showing 41·82 per cent. of its capital in this form. Only one Company paid no dividend; 27 paid 7 per cent. and over, while 22 paid 10 per cent. or over; and three paid 20 per cent. Few groups of industrial investments can show such consistently excellent results.

THE SCOTTISH TRUST AND LOAN CO. OF CEYLON, LD.,—whose annual Report will be found elsewhere—is one of the few Companies that began operations in the days of coffee, and would probably have come to utter grief when coffee collapsed, were it not for the pluck and perseverance of Mr. Thomas Dickson. senr., well supported by the local Agents, Messrs. Cumberbatch & Co. They never lost faith in the Company's properties although the returns dwindled woefully for some years; and then in the tea era came the reward of their faith and courage; for, now, all is prosperity with the "Scottish Trust," though the Directors are still in the process, it will be observed, of developing fresh property. For the year ending the 31st August last, the shareholders have divided 10 per cent in dividend and bonus. Altogether we congratuthe Company, its Officers and Managers on so satisfactory a Report.

GOOD NEWS FOR CEYLON TEA PLANTERS.—We are well pleased to learn that an influential Russian tea-buyer who has been on a visit to the island, has left so well satisfied with all he has seen and learned that he is likely to establish an Agency here next year and indeed that he has already withdrawn from his Agencies in Canton and Foochow. This gentleman was especially loud in praise of our high-grown teas. While the guest of Mr. E S. Anderson in Dikoya (as well as in Colombo) he had the opportunity of testing a great many samples; and he thinks there can be no doubt of such teas going very largely into consumption in Russia in supersession of China teas. Already M. Popoff's house uses more and more of Ceylon teas in their blends, and while the delicate high-grown are in demand for the well-to-do classes, lowcountry Ceylons suit for the cheaper blends. To get a hold of the Russian market through buying Agencies in Colombo will be a great gain to the producer.

SCORPION STINGS.—A correspondent writes:—"A paragraph in a recent issue of your paper on scorpions prompts me to write and say that I have found phenyle an infallible and instant cure for stings from scorpions, bees, wasps and hornets. A little pure phenyle rubbed on to the wounded part will give immediate relief and effectually prevent inflammation. I have tried this simple remedy in dozen of cases, and it has never failed. Publicity of the fact will perhaps be the means of giving relief to many.—*Pioneer.*

TEA AND TIGERS AT UPPER BURMAH.—"I hope next week to go up to Tamanthi to look at some native tea gardens, which do a fair trade in pickled tea (let-pet), and in exportation of tea-seed to Assam. The actual cultivation is very poor, and I don't think they have ever succeeded in getting more than 300 lb. of green leaf per acre per annum off any garden. A very big tiger was shot in this district the other day by Sepoys at a post named Yebami, on the Uuru river. I have the skull, a splendid one, but the skin was mangy. I measured the skin and it was exactly 10 feet from tip of nose to end of tail, so I suppose the tiger measured, when alive, about 8 feet 10 inches. The curious thing about the latter was that it only killed fowls, eating 54 in three days. The Sepoys fired 106 rounds at the beast, and only four bullets hit it!"—Ibid.

TEA SPECULATION.—The *H. and C. Mail* of Oct. 11th devotes most of its "planting and produce" paragraphs to the consideration of our "note of warning" about not allowing speculations in tea shares to go too far, and the need of "putting on the drag." Our contemporary introduces his review as follows:—

THEY THINK SO.—The idea has taken a firm hold in some quarters at home that the tea-planting industry is "wallering" in wealth just now, and that to be a tea planter is the next best thing to possessing a gold mine or occupying the proud position of a leading jockey. Perhaps the grocer may have helped to spread the notion that the tea planter is steeped in wealth, because in his playful way he sometimes tells his customers, when he is asked to explain how he can possibly sell such beautiful tea at such low prices, that the grower makes all the profit, and he, the retailer, in his abject despair at the prospect before him, wishes to heaven he had taken to growing tea instead of selling it over the counter. Then tea has been talked about almost as much as if it were a new beauty or the latest scandal. An article of produce is not a subject for conversation outside commercial circles as a rule, but tea is the exception. It is supposed to be grown under romantic conditions, and the tea planter is believed to be the most enviable of mortals living in an atmosphere of tropical horticulture tempered with polo and cooling drinks. Perhaps these pleasing fictions have helped to strengthen the general impression that to be connected with tea, especially the planting of it, is a blissful and remunerative association. The success of the past year's workings and the references of late in the financial papers all help to foster the notion, and it would be quite useless for a tea planter at the present moment to plead poverty in any form. Already, if we may judge by a note of warning in the *Ceylon Observer*, the planter in Ceylon is beginning to possess some lofty notions of his own as to the value of his product and the estates on which it grows. Had it not been that the minds of the company-mongering fraternity at home are engrossed over the goldfields of South Africa and West Australia, and their yearnings after the welfare of humanity consequently confined for the present to those spheres of usefulness, there certainly would have been some attempt to create a financial boom in tea. Something of the kind may happen even now, but tea estates are not quite on all fours with gold mines, and there are difficulties in the way. For all that, the public believe in tea, and they are convinced that tea proprietors who can snap their fingers at the low rate of exchange are more likely to revive the glories of the ancient order of Nabobs than any of their Anglo-Indian contemporaries

A fourth crop of Strawberries has just been gathered near Penzance. Chestnut-trees are in new leaf and bloom in north London. At Kendal damsons sold for a farthing a pound, and apples at less than a half-penny. A marrow weighing 32 lb. was displayed at the harvest festival in Eastbourne Wesleyan Church.—*Christian World.*

Death of Mr. Andrew Jamieson.—The *Kew Bulletin* for September announces the death at the General Hospital, Madras, on August 17, of Mr. Andrew Jamieson, Curator of the gardens and parks at Ootacamund, Nilgiris. Mr. Jamieson was fifty-three years of age, and had been connected with the Ootacamund Gardens for nearly twenty-seven years. He was formerly a member of the gardening staff at Kew, and was appointed to Ootacamund in September, 1868, being in sole charge of the gardens on the Nilgiris for many years, until they were placed under the control of the present Director, Mr. M. A. Lawson, who spoke most highly of Mr. Jamieson's skill and perseverance in all his duties.—*Gardeners' Chronicle.*

Brick-making in Ceylon.—There is a report current that an effort is to be made at Nuwara Eliya to make bricks according to European methods in place of those hitherto in vogue. We wish the project all success, but we would point out that the demand for bricks in Nuwara Eliya cannot be large, while past efforts to improve the system of brick-making in Ceylon have not been very successful. During recent years two companies were projected at different times to start brick-making in Colombo, according to the most approved methods, with European machinery and under European supervision, but they never got beyond the stage of projection; for some reason or other, the difficulty in one case being the personality of one of the projectors, which was objected to by the general public when they were asked to invest. An effort was also made, if we remember aright, by Government to make their own bricks when the new Post Office taken in hand, and some machinery was erected at the General Factory, but this scheme also fell through, although it was responsible to a great extent for the decided improvement in native-made bricks that has been observable during tho last two or three years. And yet there are said to be large profits made in brick-making as at present carried on, and it has been urged that, were machinery imported and European methods adopted, instead of the primitive ways at present in vogue, still larger gains might be looked for, although, in our opinion, this does not necessarily follow, as experience of other enterprises—laundry work for instance—has convinced us that in some operations, epecially where a large degree of skill is not required, the hand labour of the native can hold its own with the more expensive and complicated machine-work of the European, without taking into account the opposition of vested interests.

A Place Worth Occupying.—Sir Theodore Bent describes the only spot on the Arabian littoral which seems to be worth while annexing. This he describes under the title of the "Land of Frankincense and Myrrh":—

Dhofar is 640 miles from Muscat on the one side and 800 miles from Aden on the other, so it is situated about as far as possible from any civilised centre. Nominally it is under the Sultan of Oman: virtually it is ruled over autocratically by one Wali Suleiman, who was sent out there about eighteen years ago as Governor, at the request of the feud-torn inhabitants, by Sultan Tourki of Muscat. If ever this tract of country comes into the hands of a civilised nation, it will be capable of great and useful development. Supposing the harbour restored to receive ships of modern sixe, the Gara hills, rich in grass and vegetation, with au ample supply of water and regular rains, and, further-more, with a most delicious and health-giving air, might be of inestimable value as a granary and a health resort for the inhabitants of the burnt-up centres of Arabian commerce, Aden and Muscat. It is, as I have said, about half-way between them, and it is the only fertile stretch of coast-line along that arid frontage of the Arabian Peninsula on to the Indian Ocean.

Japanese Matting.—The demand for Japanese matting, probably made from the culms of Lepironia mucronata, appears, from a recent report from Hirgo and Osaka to be still increasing. The progress made in the manufacture of this article is more aud more noticeable each year, the export for 1894 amounting to over 277,000 rolls of 10 yards each, against 227,000 in 1893. The chief demand comes from New York, and the quantity carried to that port by sailing vessels alone amounted to over 170,000 rolls, being an average of over 12,000 rolls per vessel, which shows what an important factor as regards freight this industry has assumed. New designs of matting are constantly being invented by the Japanese, while the workmen are very ready to execute orders based on patterns received from foreign countries, so that the number of styles now available to the exporter are almost unlimited. The crop of Rush from which the matting is made was particularly good and abundant during the year, and the result has been that the trade proves capable of great expansion without any important change in prices, to the considerable advantage of both the Japanese and foreigners engaged in it. To all appearance, the demand for floor matting is likely to increase in the future.—*Gardeners' Chronicle.*

Sheet-Lightning.—An interesting paper was read at a recent meeting of the Scottish Meteorological Society by Mr. C. Michie Smith, Government Astronomer, Madras, on the thunderstorms of Madras. Almost every night, he said, sheet-lightning could be seen on the horizon, and he attributed this not to the reflection from distant flashes, as was commouly and erroneously supposed, but to the meeting of land winds and sea winds. The first would be heavily charged with dust, while the latter would be free from impurity. He had frequently noticed that when sheet-lightning occurred the clouds were double, and he suggested that these two columns of sea and land clouds might be negative aud positive to one another, and thus discharge is brought about between them. The succession of flashes was sometimes so frequent that three hundred could be counted in a minute, and this would go on for as loug as an hour and a half. The Indian Government had decided to build an observatory at a height of 7,700 feet, at Kodaikanal, and although it was primarily intended for the study of solar physics, a certain amount of meteorological work would be done. Associated with this Observatory would be another building 7,000 feet below it, and at a distance of three or four miles. The foundation stone of the former was successfully laid this morning

The Prospects of Quinine will certainly improve greatly if war breaks out in South-Eastern Europe. Meantime the New York *Drug Reporter* has the following editorial remarks:—

The attempt to secure co-operation among the Java planters, with a view to restricting production, appears to have failed, but the statistics prove that, at any rate, individuals have been willing to try to obtain better prices for their output. One feature must not be overlooked, and that is that the supply of bark is gradually failing, the indications pointing to a repetition of what has occurred in Ceylon. Manufacturers of quinine would be perfectly willing to pay higher prices for their bark, as they could easily obtain a relatively much higher price for the alkaloid, without the consumption being affected in the slightest degree.

The quinine makers do not appear to be worried by the prospect of an early establishment of a factory in Java for the manufacture of the alkaloid. As a foreign contemporary says: "The trouble will be to prevent the prepared quinine from being slaughtered on the European markets in the same way as the bark is now, for no provision is made to keep the manufactured product in the control of a central sale office. On the contrary, it is to be handed back to the planter who supplies the bark, and who will, therefore, be under the same temptation to sell with regard to quinine that has been his undoing in the matter of the mother substance."

"Handbook to the Flora of Ceylon."—Dr. Trimen's most useful handbook makes steady progress. The plates by which it is illustrated now number seventy-five. Barleria Arnottiana, with large tabular blue flowers would be a desirable introduction to our stoves. The text of the third volume has now reached the Balanophoraceæ. The terse descriptive paragraphs admitting ready comparison are in marked contrast to the diffuse dissertations admitting of comparison with difficulty if at all, which are employed by the laboratory school of botanists.—*Gardeners' Chronicle.*

The New Public-Gardens Superintendent at Nagpur.—We learn that Mr. John Horne Stephen, formerly of Kew, and lately curator of the Lal Bagh Botanic Gardens at Bangalore, Mysore, has been appointed Superintendent of the Public Gardens at Nagpur, Central Provinces of India, in succession to the late Mr. J. R. Ward. Mr. Ward died in January last from smallpox complicated with other maladies. He had only held his post since 1893, but had already won general regard; his untimely death has cut short a career of promise.—*Kew Bulletin*, September, 1895.

A New Guinea Correspondent Writes.—"The well-known German traveller, Mr. Otto Ehlers, has started on his trip through New Guinea. With 45 carriers, he intends to follow the Francisco river inland, and to cross the mountains so as to meet the Heath river in the English territory. The direct distance from shore to shore is not much more than 90 miles, but nothing whatever is known of the country to be traversed, if it is inhabited or not, if the inhabitants are friendly or hostile, if food is to be procured or not and therefore the results are still doubtful.—*M. Mail.*

The Possibilities of Colonisation in the Tropics are discussed in the articles of Mr. Frederick Boyle in the *New Review*, and Captain Lugard and Mr. A. Silva White in the *Nineteenth Century* for September :—

Mr. Boyle revives and gives personal support to the opinion of Mr. H. W. Bates (the "Naturalist on the Amazon") that, "though humanity can reach an advanced degree of culture only by battling with the inclemencies of nature in high latitudes, it is under the equator alone that the race of the future will attain to complete fruition of man's beautiful heritage, the earth." Captain Lugard, eschewing transcendentalisms, continues his search after "New British Markets," this time in tropical Africa, and winds up with the enthusiastic prophecy that the "great policy" of Colonial development announced in the speech of August 22nd, but "first formulated in 1893," "will be identified in English history as Mr. Chamberlain's." Captain Lugard may learn some day, in company with more eminent persons, that it is not quite as easy to lead the Colonial Secretary by the nose as it appears to be.

The Planting and Agricultural Enterprise of Ceylon and the London "Times." Very opportunely on the day we are publishing our "Directory" *Supplement*, the German steamer has brought us a copy of the London *Times* of Oct. 21st—three days later than our last mail—which, among other things, contains the long letter we ventured to address to the Editor on Sept. 19th on first arriving at a clear idea of the position of our Planting Enterprise. We reproduce the letter in full elsewhere and it will be observed that it refers to native Agricultural industry as well as to our Rice Imports, Customs Taxation, and the marvellous increase in the Shipping Trade of Colombo. Appearing at a time when Sir Arthur Havelock is about to hand over the reins in person to a new Governor, Sir West Ridgeway, this letter in leaded type in *The Times* cannot fail, we think, to attract a good deal of official and general attention in the mother country, and thereby to prove a good advertisement for Ceylon.

Take Notice.—The *Ceylon bserver* by the way issues a warning to Indian tea planters in italics and it only requires the accompaniment of slow music to render it melodramatic. Our contemporary says: "We have been asked by a Colombo merchant to state what proportion, according to our reckoning, of the reserved land in private hands may be available for planting with tea. The total extent of plantations being 748,017 acres, and of cultivation 379,182 acres, we get for total reserve 368,835 acres. Of this very large extent we should say that about 120,000 acres represent forest and other valuable land fully available for cultivation if due encouragement is offered; and unless a fall in the price of tea through large crops in India interfere we see no reason why 60,000 acres of this reserve should not be planted during the next five or six years—apart from any Crown land that may be made available—*so let Indian tea planters beware of supposing that there is no more tea land to plant in Ceylon.*" The italics are copied from the *Observer.—H. & C. Mail,*

The Indian Tea Crop.—A writer in the *Indian Planters' Gazette* says of the current crop:—

If the profit last year per lb. was estimated at 2d per lb. we would be inclined to think that all over it might be cut in two this year, as Assams, which principally keep up the high average price of Indian teas up to date, with a few, aye—very few—notable exceptions, have proved a "lame duck", and only contributed to lowering the average. Tis true that lately a few of the sales have been exceptionally good, but this by no means represents the general bulk, and there can be little doubt this is entirely due to the atmosphere, as all cannot have lost the "cunning of their hand." In the beginning of this season a leading broker stated his opinion that the poorness of the Indian crop was entirely due to atmospheric causes, and planters must find it a great advantage to be informed by competent authority that the fault does not lie in the system of manufacture pursued, but in the air so to speak. At one time, the 1895 crop was talked about with "bated breath," but the wind has again been tempered for the shorn lamb, and season 1896 will be upon us ere we know what we are about, and there will be probably speculation as to the enormous increase again!

What has been done and what is to come—formed the occurence of a striking passage in the British Association President's address:—

Who, at the foundation of the Association, would have believed some far-seeing philosopher if he had foretold that the spectroscope would analyse the constituents of the sun and measure the motions of the stars; that we should liquefy air and utilise temperatures approaching to the absolute zero for experimental research; that, like the magician in the "Arabian Nights," we should annihilate distance by means of the electric telegraph and the telephone; that we should illuminate our largest buildings instantaneously, with the clearness of day, by means of the electric current; that by the electric transmission of power, we should be able to utilise the Falls of Niagara to work factories at distant places; that we should extract metals from the crust of the earth by the same electrical agency to which, in some cases their deposition has been attributed? * * But what will our successors bring discussion sixty years hence? How little do we yet know of the vibration which communicate light and heat! Far as we have advanced in the application of electricity to the uses of life, we know but little even yet of its real nature. We are only on the threshold of the knowledge of molecular action, or of the constitution of the all-pervading æther. * * It is only within the last few years that we have begun to realise that electricity is closely connected with the vibrations which cause heat and light, and which seem to pervade all space—vibrations which may be termed the voice of the Creator calling to each atom and to each cell of protoplasm to fall into its ordained position, each, as it were, a musical note in the harmonious symphony which we call the universe.

"SABAI" GRASS FOR PAPER.—Experiments are being made in the Deccan for improving the growth of the *sabai* grass, which is fast taking the place of the failing esparto in the manufacture of paper. The Deccan Paper Mill Company has obtained a free grant for five years of 50 acres of land for the cultivation of the *sabai* grass.—A small beginning was made in 1893-94 in the export of printing and writing paper from Bengal to Ceylon, Java, the Straits, and even to Australia when the export value was only Rx. 3,827. In 1894-95 it had increased to Rx. 8,036, and from all accounts there is a distinct probability of the export trade of India in paper taking a prominent position in the next yearly Trade returns.—*S. and E. Engineer.*

"CENTRAL AFRICAN PLANTER."—We have received a copy of the first number of this little periodical (12 pages) published at Zomba, dated September and edited by R. S. Hynde, F.R.S.G.S. We quote from the introduction as follows:—

We have already a paper devoted to Mission interests, a general Magazine, and a Government *Gazette*, but no organ devoted to the planting interests of the community—the interest, we venture to state, on which the commercial prosperity of B.C.A. depends. It will thus be seen that we are attempting to fill a place which has hitherto been vacant and that we have neither the wish, nor the intention, to trench upon the fields already taken up. Such is our apology and now a few words as to our plans. We propose to run the paper somewhat on the lines of the "*Tropical Agriculturist*" of Ceylon—a paper which, as most of us think, may be fitly styled the Prince of Planters' Papers. We will endeavour to put before our readers the latest information on Tropical Agriculture at our command and we also hope to publish, from time to time, original articles from residents in the country dealing with planting questions.

We appreciate the compliment to ourselves. The most important article is entitled a "Retrospect" as to coffee planting in Central Africa which we reproduce elsewhere. We wish the "Central African Planter" a successful career.

SUNSPOTS AND RAINFALL IN INDIA AND CEYLON.—The *Pioneer* has the following deliverance on this subject:—

Once upon a time everyone who aspired to do his duty at an Indian dinner table had to know something about the theory of sunspots. But now that Sir W. W. Hunter is gone, and the weather on the whole remains much the same, the interest of the subject in general conversation has rather waned. There is in fact only one region in India where it has been shown that a general agreement exists between the changes in the solar photosphere and the amount of rainfall. This region is the Carnatic, where the rainfall shows a very fairly regular increase and decrease which approximates in a very remarkable manner to the course of the sunspot variation. This is the more remarkable as the total rainfall of India affords no evidence of a similar eleven year variation, and the rainfall of the present autumn in Madras will hence be carefully watched by those who are interested in establishing a relationship between the progress of solar changes and terrestrial meteorology. A slight maximum of sunspots occurred in the beginning of 1884, and that year was one of heavy rainfall in Madras. The present year 1895 is also one of maximum spots, hence according to the theory heavy rains should be received over the Carnatic and Southern India generally during the prevalence of the present North-East Monsoon. So far this anticipation has been amply fulfilled, as during the past fortnight, *i.e.*, since the setting in of the monsoon, the rainfall has been abnormally heavy over the whole of the peninsula region. Thus Colombo has received 22 inches instead of 8 inches; Madras 8 inches instead of 6 inches; Masulipatam 8 inches instead of 5 inches; and Cochin 12 inches instead of 7 inches, a result which will be equally acceptable to the Southern India ryot as to the believer in direct solar action on terrestrial weather.

DAYS OF OLD: MR. R. E. LEWIS.—We are much pleased to have a long and interesting communication—to appear in an early issue—on "Days of Old" from this gentleman who pioneered coffee here in the early "forties"; and afterwards became Editor and author and merchant—joining the firm of Messrs. Darley, Butler & Co. Mr. Lewis was one of the very first to write the history of coffee-planting in Ceylon. He must now be over 75 years and yet it is interesting to learn that although Mrs. Lewis and himself "suffered from influenza—critically at the time—we are both well and I have regained my active habits."

CINCHONA.—Mr. O'Conor says that in 8 years the area under cinchona in India has fallen from 14,491 to 8,709 acres; but the Madras figures do not quite agree with this result. In Ceylon, however, in 8 years we have gone from 40,000 down to 5,000 acres!—Speaking of cinchona, we may here give figures—the latest available—supplied to us by Mr. Morey for the importation of bark and quinine into the United States:—

	Quantity.	Value.
Cinchona Bark	lb. 3,423,941	$299,998·00
Cinchoniada	oz. 11,483	1,586·00
Quinia [Sulpht of]	oz. 2,686,677	542,440·00
All other Salts of Cinchona	oz. 156,442	22,366·00
	oz. 2,854,602	$866,390·00

TEA AND FINANCE.—We are not infrequently asked to express an opinion as to the merits of certain tea companies as investments, and whether the new projects launched from time to time are worth attention. We leave to those who make a special study of the stock and share markets the task of acting as financial advisers in these matters. We have continuously pointed out that the shares in sound and well managed tea gardens are well worth attention, and as we give ample information about all that concerns these gardens week by week it is not a very difficult task for the intelligent investor to ascertain for himself the prospect before him. That tea planting is on a sound basis is quite certain. It will have its ups and downs, but in the case of well-managed properties it offers much that cannot be found elsewhere. The preference shares in some of the leading companies—the Jokai Company is an instance—are valued as highly by investors as Colonial Government securities, and this is evidence of the solidity of the tea industry from the investors' point of view. That every new tea concern whose prospectus is issued is necessarily a good thing by no means follows.

INDIAN AND CEYLON TEA IN AMERICA.—We understand that Mr. Mackenzie, special commissioner of Ceylon, is expected at Liverpool tomorrow (Saturday) by the ss. "Etruria." His report on the outlook for British-grown teas in America will be awaited with much interest. It is stated that the 304,000 acres of tea at present under cultivation in Ceylon will yield, this season, some 90,000,000 lb. of tea, and the revised estimate of the Indian crop is 140,000,000 lb., so that there will be no lack of tea to supply our American cousins. Mr. Blechynden's proposed scheme of operations is at present receiving the attention of the American and Foreign Tea Committee of the Indian Tea Association. His programme is, we believe, based in a great measure on co-operation with Ceylon, both in respect of demonstrations in Food Shows and in subsidising firms already engaged in the business of advertising and selling Indian tea. The scheme also contemplates enlisting the interests of newspaper men, and thus securing valuable notices. Mr. Blechynden's operations also include the services of six talented saleswomen, who discourse on the merits of Indian tea to select gatherings of the sex, in addition to which, as we stated last week, the agency of the Salvation Army has been enlisted in the joint service of India and Ceylon.

LABOUR LAWS IN INDIA.—The Bengal Chamber of Commerce has addressed a strong protest to the Bengal Government against "the attempts made by a section of British manufacturing interests to retard the industrial development of India by forcing on this country, under the sanction of Parliament, labour laws wholly unsuited to the conditions under which labour has to be performed in India."

HANDBOOK OF THE FLORA OF CEYLON.—The third volume, or third part, as it is designated, of this admirable work has just appeared. It contains the orders *Valerianaceæ* to *Balanophoraceæ*. With it are issued plates 51 to 75. These are of quarto size, and represent interesting or critical species Dr. Trimen, who is now on leave in this country, is to be congratulated on the rapid progress of his undertaking. For further particulars see *Kew Bulletin*, 1894, p. 34 and p. 227.—*Kew Bulletin.*

CEYLON INVESTMENTS IN JAVA.—From what we hear of the results of the investment of Ceylon capital in coffee in Java, the capitalists who have cried out against the local Government for withholding sales of Crown land and so forcing capital to find an outlet elsewhere have not much cause for complaint. Two and a half year old coffee giving 4½ cwts. an acre is equal to anything in Ceylon in the old coffee days, and a coffee estate in Java must be a finer property than the best tea estate in this island at present prices asked for estates or for jungle. There seems to be no difficulty about getting land in Java, and, with the splendid soil there, and facilities for working, the wisdom of planters having a second string to their bow instead of overdoing the tea output and swamping the market ought to be apparent to everybody.—Local "Times." [And so our contemporary appears to rejoice in the development of Java with skill and capital from Ceylon, rather than in the extension of enterprise locally. This is certainly a new form of patriotism !—ED. *T.A.*]

ADVERTISING TEA IN AMERICA.—Another packet of Chicago, Brooklyn and New York papers shew that Mr. Mackenzie and Mr Blechynden are not idle—for they seem to have joined forces in *advertising*, and wisely so, we think. The *American Grocer* has a really striking half-page which is headed,—"The Rise of Indian and Ceylon Tea and the Eclipse of China-Tea"; but which ends:—"Insist on your grocer supplying you with the pure Ceylon Teas," so this must be a Ceylon advertisement only.—In this connection we may notice that Mr. Elwood May send us a neat little pamphlet called "Tea Secrets" issued by his "Ceylon Planters' Tea Co." which ought to make a good advertisement of his tea and coffee brands.—In one advertisement, our Commissioner seems to show for the United States alone (?) a consumption of Indian and Ceylon teas in 1893 and 1894 equal to 2,500,000 and 3,300,000 lb. respectively. This is far above what our statistics for London, Colombo and Calcutta shipments prove, and we suspect though headed "U.S.," that Canada is included. Mr. R. V. Webster has been telling our contemporaries that the imports for the present year are bound to be 40 per cent above those of 1894. That would bring us up—on our statistics—as follows :—

United States and Canada 1894	=	2,633,426 lb
40 per cent increase	=	1,453,368 ,,
U.S. & Canada in 1895		5,086,804 lb.

Of course, the bulk of this is sent from London.

TEA CULTURE IN ASSAM.—We have to acknowledge with thanks the receipt of a Blue Book on this industry for 1894 sent to us by Mr. J. Braine, of Joonkballie Tea Company, Limited. We are much obliged ; we had already got the statistics and embodied them in our "Handbook and Directory." There is a small map of Assam showing divisions, stations Railways and droas.

THE NEW ZEALAND TARIFF.—We are much obliged to an ex-Ceylon Colonist who sends us a copy of the new Tariff for New Zealand from which we quote as follows :—

CLASS 1—FOODS AND ARTICLES FOR HUMAN CONSUMPTION.

CLASS 4—NON-ALCOHOLIC BEVERAGES.

Name of Article.	Former Duty.	Present Duty.
Tea	6d lb.	4d lb.
Coffee, raw	3d lb.	2d lb.
Coffee essence	15 p.c.	20 p.c.

TEA AND COFFEE IN BRITISH DELHI AND LANGKAT—The report of the British Delhi and Langkat Tobacco Company for the year ended December 31st, 1894, states :—Tea and Coffee.—Fair progress has been made in carrying out the estimated extensions of these new cultures. The exact particulars cannot be given, owing to the prolonged illness of the manager, Mr. Inch. His opinion, as an experienced Ceylon planter, completely bears out the estimate already formed of the entire suitability of the climate and soil for raising these products.—*London and China Express*, Oct. 18.

CEYLON AND THE PLANTING ENTERPRISE.—In a long letter to the *Times*, Mr. Ferguson, of the *Ceylon Observer*, points out the position and prospects of the planting enterprise of Ceylon, and supplements his letter with some interesting statistics. * * * Mr. Ferguson winds up his letter by saying "that the two notable material facts in the history of Ceylon during the past fifteen years are—(1) the rise of the tea-growing industry from 9,000 acres planted in 1880 to over 300.000 acres in 1895; (2) the immense growth and ever-increasing expansion in the tonnage and trade of the capital, Colombo."
Oct. 25.

CEYLON TEA IN AMERICA.—The following report on tea in the American *Grocer*, of Sept. 25th, received today, shows that increasing attention is given to our product :—

Ceylons have been selling freely and at unusually low rates. The Ceylon Planters' Commissioner has again been in this city and a good deal of advertising done, evidently with the view of attracting the consumer. Unquestionably it will bear its fruit and the demand for teas from this island become even more general. A rather unusual feature was this year observable in London at the opening of the season, viz.: Ceylons advanced in price while Indias gave way. The rapidity with which the output increased is remarkable—to say that a few years ago they exported 1,000,000 pounds, while this year the export will exceed 90,000,000 pounds. The quality of recent shipments shows improvement, and some good trade are offering.

Quotations are as follows:—Indias.—Pekoe souchong 16 to 19c ; pekoe, style and cup, 21 to 22c ; pekoe, extra, 22 to 23c; orange pekoes, 23 to 25c; orange sylhet, fancy style and cup, 26 to 28c. Ceylons.—Pekoe souchong, 15 to 17c; pekoe, ordinary 17 to 18c; pekoe, extra 18 to 21c; orange, pekoes 22 to 25c; B.O. pekoe, extra 28 to 35c ; fancy orange, 45 to 50c. Darjeeling.—Pekoe souchong, good cup 25 to 32c ; orange pekoe 40 to 55c; B.O. pekoe 55 to 65c.

Today at noon the Montgomery Auction and Commission Company will sell 3,652 packages of teas, viz.: 938 half-chests Moyune, including a "crack" chop; 1,264 half-chests and boxes Pingsuey, new season's; 426 half-chests congou, new crop, including desirable pekoes; 67 packages India, Java and Ceylon; 229 half-chests and boxes Amoy; 225 half-chests Foochow; 503 half-chests and boxes Formosa.

Correspondence.

To the Editor.

GUTTA PERCHA TREES: EXPERIMENTS SUGGESTED.

Oct. 2nd.

Sir,—Your paper (the *Observer*) has such a wide circulation and letters have the advantage of appearing in the *Tropical Agriculturist*, which touches specially planters in foreign countries, that I would suggest to some of those interested to try the following experiment. I have very good grounds for stating that it can be successfully carried out and has been so.

Where the gutta percha tree exists, if the leaves are allowed to fall ripe and are then collected and withered, then rotted and time allowed for them to decay, and if the matter is then collected and ground up finely and treated with bisulphate of carbon a very superior gutta percha is produced. I have lately seen cakes of this gutta percha drawn out as thin and fine as rubber.

Naturally it will occur to anyone who is interested in this subject that by this plan the trees can easily be deprived of their leaves and twigs without in any way deteriorating the parent stem. Surely some gutta percha trees can be found in Ceylon and this experiment tried and reported upon in your paper.

It is only fair, however, to say that this matter does not originate from me, and that good work is being done and excellent gutta percha collected.

I am sending out to Africa by this mail information on this subject with the view of inducing some of the growers of Landolphia to try the experiment where a good supply of leaves can be produced. These species of Landolphia (four or five of which I have obtained) I find the greatest difficulty in growing and Mr. Horace Billington informs me that he experienced great difficulty in getting up a stock of these rubber-yielding plants.

Some of your readers will remember that I urged the collection of rubber and gutta from trees some years since by extraction and boiling of the fresh foliage, but, from all I can hear, this has not yielded a satisfactory result except in the boiling of the twigs and stems of the Landolphia.—Yours truly,

THOS. CHRISTY.

[Ceylon being a very paradise for *leafage*, would be the place for experiments. Planters with rubber trees should make a trial.—Ed. *T.A.*]

VEGETABLE BUTTER.

London, E.C., Oct. 10.

Dear Sir,—I enclose a cutting from *The Standard* of the 7th October in reference to the preparation of Coconut Butter which is made from a vegetable oil as opposed to Margarine which is made from animal fat. It might therefore be termed vegetable butter, and as such would be much appreciated by those who, either by education or inclination are opposed to the consumption of oil or fat of animal origin:—

"Some time ago it was reported that butter had been made successfully from coconuts, but it was supposed that the cheapness of margarine had prevented the discovery from assuming commercial importance. Now, however, an American dairy paper reports the establishment of an extensive factory for the manufacture of coconut butter, which is already being made at the rate of 10,000lb. a day. The crude coconut oil it is stated, is received from Cochin in tierces of 2,000lb. each. This oil is almost colourless and tasteless. After passing through two processes, which are kept secret, it emerges white and granular, and afterwards it is churned with skim milk or butter-milk to give it a butter flavour. At present most of the commodity is sent out in its natural white colour, for the use of confectioners and cooks in restaurants, but that which is sold for table use is coloured to resemble butter, and for the best quality it is intended to add a little cream before churning. The so-called butter is said to possess a clean, sweet flavour, and to keep remarkably well. The oil from which it is chiefly made is declared cheaper and better than "neutral lard," emulsifying more easily with skim milk, and being more difficult to detect when mixed with real butter."

Some few years back I exerted myself to bring to the notice of an old Ceylon firm a project for the manufacture of this *particular butter* from coconut oil; but at that time the firm in question could not see their way to take up the matter; and now the ever enterprising Americans have perfected the process in a practical manner.—Yours faithfully,

JOHN HUGHES.

A USEFUL GRASS.

Dear Sir,—In last *Kew Bulletin* (Sept. 1895) reference is made to a very useful grass *Andropogon pertusus* known in the West Indies as "sour grass" and in Bengal as *palava*. Can you or any of your correspondents say if it is to be found in Ceylon and what is its local name.—Yours, &c.,

HAY.

[Mr. Nock will at once be able to tell us if we have this grass.—Ed. *T.A.*]

MR. ROBERT THOMSON'S REPORT ON COLOMBIA, S. AMERICA.

Sydenham, Oct. 18.

Dear Sir,—I have the pleasure to forward by book post today a copy of my last Report on Colombia. I was very pleased to see you had reproduced in your valuable work my previous Report. I think this was in the July (1894) number of the *Tropical Agriculturist*. One error slipped into the introductory part of that report, an error on your part, viz., you mentioned "Joseph" Thomson instead of Robert.—I am, your obedient servant,

ROBERT THOMSON.

[The Report referred to, gives us much useful and novel information and extracts will be found quoted elsewhere.—Ed. *T.A.*]

"ANDROPOGON PERTUSUS."

Dear Sir,—Andropogon pertusus, Willd. Sp. Pl., Rox. Fl. Ind. 1. p. 238, Thw. Ew. p. 437. A very common grass from the sea coast up to 3,000 feet elevation. Plentiful about Colombo. It is an excellent fodder grass, either in a green or dry state and cattle are very fond of it. It can easily be distinguished from the other species of this genus by a remarkable pit on the back of the calyx of the hermaphrodite flower. It creeps a little, but the culms rise from one to two feet with three to twelve digitate spikes of flowers. It is not known by any native name.

J. A.

No. II.

Dear Sir,—This grass is indigenous to Ceylon, but it apparently has no distinctive native name. W. Ferguson in his Notes on Ceylon Grasses says it is very common from the sea coast to 2,000 and 3,000 feet, and speaks of it as an excellent fodder grass either in a green or dry state. The following is his description of the grass: "It creeps near the root but has culms from one to two feet high and three to twelve digitate spikes of flowers. It can at once be distinguished from the other species of this genus by a remarkable pit on the back of the calyx of the hermaphrodite flower." Baron von Mueller states that in Australia it is regarded as one of the best grasses

to withstand long droughts, while it will bear any amount of feeding. There it is known as "Pitted bluegrass." The *Australian Gazette* for February 1893 contains a description with plate of this grass which it recommends as a lawn-grass especially in dry districts. Dr. Watt in his Dictionary quotes Dr. Stewart as saying that it is an "excellent fodder for bullocks, &c., and for horses when green."

AGRICULTURIST.

WANTED—THE EXPERIENCE OF PLANTERS WHO PAY THEIR COOLIES MONTHLY.

Glencairn, Oct. 23.

DEAR SIR,—*Re* the present discussion on the labour question,—there must be many Planters in the Island who pay their coolies monthly; will they kindly come forward and give their opinion *pro bono publico.* By monthly payments is meant, I presume, paying for October say on the 30th November. If such be the case, I think a large majority of estates do this already.—Yours faithfully, "TEA."

THE PAMPHLET UPON "THE LABOUR QUESTION."

DEAR SIR,—The writer on "The Labour Question" begins by a complaint that the writers and speakers upon the question have hitherto taken the views only of Proprietors and Superintendents, and represented the labourers as having become demoralized and different to what they used to be. Almost the whole of his paper confirms this great difference, and in one part he actually traces a cause of it, as far as the Government action in imposing a medical ordinance and altering relations between employers and employed. It does seem preposterous that a writer who virtually condemns Government action and interference in one direction should seek for more of it in another. He is equally inconsistent when he says that individual planters may quote their own and other cases to prove his conclusions incorrect, but that he is *not dealing with individual cases.* Yet his whole argument for monthly payment is supported by his reference to his *one* "friend of great experience." He must have more faith than is visible, if he supposes that the advance system stops at the estate, and does not enter into the Bazaar. It would be extremely interesting to know how his one friend's coolies shifted off their original and "immortal" debts, and what monthly payments enable them to do it.

It appears to me that the reckless issue of advances by young and inexperienced Europeans in new districts in former times, as well as now, somehow left the entanglement and embarrassment, if it be such, to the present Proprietors, and that as far as I can judge, Ramasamy is the only one who has increased in independence and not the Proprietors nor the Superintendents.

He makes far too much of the point of inherited debt. To whom are the orphans liable for the debts of dead parents? Do they inherit any rights or advantages as well as obligations? and how is the temporary proprietor to step in and control relations between kanganies and coolies when everyone knows it is an affair of their own ancient custom and selection.

He says, however, that it has of late years been found impracticable to recover the money from those who are supposed to owe it, but the debt is passed from estate to estate. Where, then, is the hardship? The cooly is absolutely free. He passes on where he wishes; increases his debts by the further mortgage of his security, but *doesn't pay* it off, so the writer says, on account of his inherited woes. Why, surely, the orphan's inheritance of debt has enabled him to recover twice its amount ere this! At least on the writer's showing. For the kangany also, the writer expresses great sympathy—for he is said to have neither money nor security (only an umbrella). Now really it becomes an interesting question: the kangani has nothing, the cooly only debts, and the orphans an incubus of responsibility enough to bring tears to one's eyes, if only one wasn't wondering again about the money itself! Who got it? Where is it? All consumed by those dead coolies. At this point I thought I had solved the problem in the manner desired by the author, but alas! he says "in olden days their debts were never more than could easily be repaid." So now, indeed, the writer on the "Labour question" has complicated matters and certainly cleared up no mystery.

Formerly the system was one of "Coast Advances"; it underwent changes by reason of the needs of new districts and inexperienced planters and it became simply advances, and the wily and "able financier," the Tamil kangany, financed his cash to his native village and his debit balance and obligations to his foreign occupation, and therefore, according to the sentimental author, the poor orphan didn't pay his debts but only increased them, and therefore he should be relieved of them altogether! SIC.

NO. II.

October 23rd.

SIR,—Surely the present Labour Ordinance binds Planters down enough without asking Government for further legislation. Superintendents can now pay their coolies monthly or fortnightly if they think it is for the benefit of the estate.

It seems that the cry for a new Ordinance, comes principally from men who have only been working labour since tea took the place of coffee, and who are not in touch with their coolies and cannot manage them; these men must have some excuse for a short labour force and so they call for a new Ordinance to make coolies' monthly pay compulsory, fearing their labour might go to another estate when coolies are paid every other month.

Look at the scheme in another way; if a Superintendent likes, he can find out exactly how much each cooly owes for Coast Advances to his Kangany, and each payday could hand over a proportion of his pay, taking the balance for his monthly expenses; a cooly can easily live on R5 a month and pay for his rice out of this.

If the coolies are paid every month and there is nothing owing them, who is to be responsible for the Coast Advances, is each cooly to have a separate stamped advance account? The Kangany now keeps the coolies in a gang and sees that they are not crimped; why should he do this, or bring coolies, if he does not derive any benefit? Another item to be considered is the Tamil custom of hereditary debts, always practised on the Coast, would it be advisable for Ceylon to alter this; why not India first?—Yours faithfully,

"TAKE CARE."

LIBERIAN COFFEE AND COCOA, RUBBER &c.

Dedana Etta, Oct. 25.

DEAR SIR,—It is an incredible statement appearing in one of the Madras papers, that Ceylon planters dissatisfied with the profits of tea planting, were running all over Southern India to select land to plant their old love, Arabian Coffee. Not ten

per cent. of the original coffee planters (proprietors) of the period when the decade began are alive or resident here. What is being planted in Ceylon is Liberian Coffee, and that timidly and quietly by those with little or no experience, and none of these care to run over to India for the purpose, as there is much land available for this product in districts where Arabian Coffee in its best days would not yield very profitable returns. The cultivation of tea seems best to thrive in the hands of Limited Companies, and the gradual sinking in value of the article will not alarm the shareholders even if the dividends per annum are only five per cent. Individual proprietors of medium-sized estates would prefer products giving larger returns, and Cocoa and Liberian Coffee estates are what we expect to see in numbers in a few years. The price of cocoa has fallen, but not yet to its former *normal* price, and its present average value has been maintained, since its fall, from the unaccountable and most certainly, unexpected prices obtained a year ago. Liberian Coffee promises not only to maintain its present very paying price, but there is every probability of the price for bulk increasing.

The cultivation of these products is slower than tea, and has hence been overlooked. There has been much planted out this year, and the present weather has enabled the filling in of vacancies to be successfully carried out. At this season of the year small plants are preferred, as they take root sooner and stand the drought that follows much better than larger plants. These latter do well generally in the South-West season. In low districts dalap cuttings or seedings should now be grown as shade. By January, when by then they are well rooted, they grow vigorously during the drought that follows, seeking moisture from below. Some time back Mr. Munton drew attention to the Castilloa rubber, used as a shade tree in South America. These trees grow very tall, afford excellent shade, as they do not shed their leaves during the hot months and at the end of eight or ten years yield profits. The planting of Liberian Coffee this season is an advantage, as the plants are generally free from disease and take a good start, fitting them, for an attack in June—July. A nursery for the South-East is best started in March—the end of the ripening season. R. T. M.

COOLIES AND LABOUR LAWS: IMPORTANT TESTIMONY.

Oct. 27.

SIR,—I was glad to see your correspondent "*Aberdonensis's*" letter in the *Observer* of 25th inst. My experience - and it has been a pretty large one—coincides entirely with his. To take the matter of "inherited debt," during the last few months I have been asked to take on a good number of coolies in small gangs of two or three, who had been paid off by me a year or two previously. In every case their debts had increased from R10 to R15 per head to from R40 to R60. The explanation of this is simple. The coolie knowing his value demanded from his Kangany further advances under the threat of leaving unless he got them; that money he has simply squandered to the benefit of the proprietors of Arrack Taverns and Boutiques. As an instance of this, I may quote a case which I know to be true. On the recent Tee Vali, an Arrack Tavern renter in this district, who supplies arrack at the most to a group of not more than ten estates, acknowledged that he had sold arrack to the value of over R2,000 in three days.

Some impulsive people have now jumped to the conclusion, that monthly payments will prove a panacea for all our troubles. A friend of mine, than whom no better or more practical planter exists tried them on taking up a large charge in another district, but was obliged to revert to his old system of three monthly payments as he found his labour force was becoming very unsettled. Heaven help us if Government are now to be asked to step in and compel us to pay monthly. Surely there has been enough legislation in recent years regarding our coolies, and does anyone for a moment suppose that were such a law passed, it would be anything but a dead letter in a number of cases. I have no doubt the same gentlemen who advocate the passing of the above law will shortly be clamouring for indentured labour, with all the necessary regulations and interference by Government.

The only way out of our present difficulties is to stop the system of bidding against each other for labour now in the country, and to endeavour to get more from India; but I must confess I see little chance of this happy consummation unless we Planters can be brought to one mind in the matter, and judging from past experience. I fear that will be a difficult matter.—I am, etc., M.

THE LABOUR QUESTION AND COOLY PAYMENTS.

Gammadua, Oct. 27.

DEAR SIR,—One of the recommendations of the Joint Committee of the Ceylon Chamber of Commerce and the Planters' Association appointed to consider the Question of Coast Advances, was the adoption of "a system of monthly payment of coolies wages within say 35 to 40 days, and in any event to make payments every two months." As I had the honour of serving on that Committee and supporting the recommendation my experience in the paying of coolies monthly may now be of interest to "Tea" and your readers and be useful in discussing the Labour Question.

My first experience of paying coolies monthly dates back five years, the first payment of a single month' balance paid to all my coolies was in September, 1890, when the July balance of pay was handed them and since then I have had a pay-day monthly with the exception of the following months:—

April, August and December ..	1891
February, September and November ..	1892
March and September	1893
November	1894
September	1895

By special request of the kanganies the balance of pay then due, was held over till the following month and two months' balances were then paid together. To show that the monthly system of payment is favourable to the recovery of Coast Advances, I submit an abstract of the advances of three estates belonging to one group:—

During		Advanced. R	c.	Recovered. R	c.
1889	..	1,414	71	637	30
1890	..	977	81	1,271	15
1891	..	1,797	00	1,685	78
1892	..	1,715	25	1,679	41
1893	..	1,570	00	2,073	83
1894	..	1,897	50	1,809	46
½ of 1895	..	2,531	00	1,846	13
4 mons. „	..	1,417	25	690	53
		13,320	52	11,693	59

The average *daily out-turn* of coolies at 31st December 1888 was (taking 31 days in the month) 127 coolies. The average days for September 30th 1895 was 257 without weeding contractors' coolies.

Other three estates in my charge have no coast advance account and trifling sums advanced to the kanganies going or sending coolies to the Coast annually to recruit, are generally so small they are debited in the checkroll, and recovered in a month or two.

At first the kanganies were rather opposed to the coolies being paid monthly, as they were afraid they would be unable to recover the debts due by the coolies, and they would not be able to repay their coast advances, and the system had to be introduced gradually. Experience has now proved that the coolies are not more inclined to leave the estate (or in other words bolt) than when the quarterly payment system was in force. For many reasons the coolies prefer the monthly payment of their balance and as a rule many of them know exactly how much they have to get; but about a "peranal" time they like having a little extra cash, and hence the request that two months' balances *be* paid together. According to the law as it is at present one runs a risk of losing his coolies by witholding the balance of pay due to them for a longer period than sixty days.

I do not think it would be advisable to ask Government to make monthly payments compulsory, that it might be beneficial to the coolies I admit; but it might also be very inconvenient some months both for proprietor and coolies were the system enforced by law; but so many planters are finding out for themselves the advantages of the monthly payment system that it will probably ere long be almost universal without the interference of Government. I understand that there are Managers of estates who pay their coolies monthly balances the following month, and find it beneficial to do so; but my reason for holding one clear month's balance in hand is. that should a cooly be in debt to the check-roll that month, the debt is recovered from the previous balance about to be paid, and tell him this has been done. While the coolies are being paid those who admit being in debt to their kanganies, have by mutual agreement set aside from their pay, a sum towards the payment of the debt, and as a record of this payment is kept in the check roll, it can be referred to, should any dispute arise as to the amount recovered for the kangany. It is very seldom this has to be referred to, and as all recoveries of debt as a rule are made at the pay table, it is also seldom there is any squabbling over their debts at the lines. These recoveries made from the coolies, plus what can be recovered from the kangany's pay, go towards his Coast advance debt should that individual be in debt.

As to the debts due by the coolies to the kanganies, let any planter attempt to bring a gang of coolies from the Coast through a paid Agent other than a kangani, and he will very soon find how coolies' debts mount up. It is not only the advances on the Coast, feeding and transport, but after their arrival on the estate there is the cumbly, cloths, chattypans and curry stuffs all go towards his debt before a day's work is done. Should he arrive in wet weather or at a feverish season he may be bowled over with fever, or if a lazy fellow, he may sham sickness and loaf in the lines for days and refuse to do any work. Rice has to be given him or he will soon be in a state he could not work. Or he may clear out within 10 days of his arrival, taking three or four of his companions with him, necessitating a further outlay of more rupees and coolies to search for, and when caught, bring them back to the estate. Being new coolies they are cautioned, that if they bolt a second time there is a method of punishing coolies in Kandy, which is graphically described; but even this has not always the effect of keeping them on the estate. Another attempt is made and getting clear away, more rupees are again dealt out and more coolies put on their track with instructions to go and find them. Ultimately they are discovered and brought back, and as they can give no satisfactory reason, if any, for running away, the master is compelled to make an example of them and to Court they are sent and receive the sentence of one month's rigorous imprisonment.

Under the present able Administration of the Prisons and the system adopted for punishing offenders, not many coolies are likely to runaway a second time after they have had only one month's rigorous imprisonment.

Though it may appear that the services of a cooly doing his month in Kandy are lost to the estate they are not so, if at the expiry of the month the coolies are brought back to the estate; their experience of prison life is related in all the lines before they have been 24 hours on the estate, and for a time at least it has a very restraining effect and induces a more contented feeling amongst the others.

If Superintendents would take the trouble to send crimps, and men found loitering on their estates, to be dealt with by the Court, and succeed in getting them one month, there would be less dissatisfaction, amongst the coolies, less bolting, more work done and less debt.

While this is being done, Managers or employers of Tamil labour should send their advances direct to the coast as far as possible and discourage their Kanganies from taking on coolies with tundus. That there are occasions when it may be advisable to give money to pay up a debt due by relatives of one's coolies working on another estate, is admittted; but as a rule it is the readiness of the Kanganis, backed by the Superintendent to pay up the debts as shown in *these* tundus that have been the means of adding to the debts and the curse of the cooly.

Break up, by discouraging, this system, and the cooly will settle down to his work and in most cases gradually pay off what he owes.—Yours faithfully, JAMES WESTLAND.

COMPULSORY MONTHLY PAYMENTS.

Kandy.

Sir,—The *Observer* of 17th inst. contains a Report of the proceedings of the Dikoya Planters' Association which includes the *result* of a discussion on the Labour Question, which must be of great interest and importance to the whole Planting community, and it is very much to be regretted that the arguments adduced in favour of the resolutions carried are not published.

It seems to me that there is an obvious intention to carry, if possible, the set of resolutions in each District Association and that then, backed up by such a weight of authority, the 'set' of resolutions should be brought before the Parent body and, as full reports of *discussions* at the District Associations are very rarely, if ever, reported and published, those of the planters who do not attend District meetings (very many of course) will have no opportunity of hearing any arguments for or against the proposals. No harm, therefore, can be done by discussing the matter.

Two resolutions were passed by the Dikoya Association (A) claiming that the cooly shall not be allowed to quit service until his advances are paid off, and that advances shall be a first claim over his wages. (B) That monthly payment of wages shall be compulsory. Now, really, sir, can the District Association lend itself to such an inference as the first resolution involves. Can anybody assert that it is the practice for coolies to quit service without paying off their Advances? I dont me n to say it is *never* done. But out of our community say of 2,000 planters do you believe 50 can come forward at the P.A. meetings or admit that their coolies have quitted service without in some way or another paying their debts? As a "practice," is not the inference from the resolution wholly and entirely wrong?

As regards making Advances a first claim against wages, or up to a certain limit, I am not prepared to raise any objection. It would be a perfectly fair claim considering the advantages already held by the cooly for the recovery of his wages against the estate and other privileges he enjoys if payment of wages is long delayed and I should urge that advances whatever the amount should be recoverable by means of the Court of Requests as is the case with actions taken by coolies for recovery of wages. But this very fair and righteous claim is so manifestly just in itself that it might well be urged on its own merits and not tacked on to a set of resolutions. Our Planting Representative in the Legislative Council might well direct his and our attention to it when the amended Court of Requests Ordinance comes up shortly in Council.

Now the second resolution (13) regarding compulsory monthly payments, calls for unpleasant comment in its singular position.

If it had stood honestly (though mistakenly) alone, it could have been dealt with by itself, but from the way the "*set*" of resolutions is worded it reads as if the Hon. G. F. Walker thought he was making a concession to somebody. Which is it the Government or the cooly? and that in return for the Government granting the demand of the first resolution, be implied approval of compulsory monthly payments proposed in the second, now there is here. Something very wrong, for the 1st claim is not founded on the general practice among coolies and his 2nd claim if a just one should be granted without any *quid pro quo*. Why should any (supposed) concession be made. Moreover what is conceded?

Every planter in Ceylon may at this moment if he chooses pay his coolies monthly. Yet, it is no exaggeration to say that not 7 per cent of planters do it. Why not? Because, now, as in the past, it is found to have no advantage whatever; none to the manager for he has more trouble and recovers less of his advances at a time, and the same disadvantage meets the kangani also for same reason and on this account he is *compelled* to issue more advances for weekly requirement to his coolies, and also it is a disadvantage to the coolie because he gets less pay in his hand at a time. Mr. Giles Walker and others who agree with him will say the cooly is wrong and that it must be to his advantage and if he can't see it, he must be taught and made to see it by legislation. Curious how legislation, medical legislation, hopelessly failed in these directions years ago and, the cooly can't see it even yet!

Let the champions of monthly payments state the reasons for their belief—of several who have adopted the system, not one gives assurance that either he or his coolies are any better for the change.

The neighbouring coolies do not rush off in crowds to the gentleman who pays monthly to seize the advantages he is supposed to thrust on them. He is not better off than his neighbours, his advances don't seem to be less than his neighbour or better secured. But that is his own affair, let him pay monthly as every planter can if he wishes to. What I want to know is why should monthly payments of coolies be *compulsory*. Not long ago the leading planter in East Matale mentioned that his coolies had begged him to postpone paying one month and pay two so that for Tee Vali they might have more in hand. That gentleman, I believe, is also a great champion of monthly payments. It is presumed that he pocketed his principles and accommodated his coolies, but does this gentleman want legislation to prevent his meeting the wishes of his coolies and strengthen the backbone of such principles. Monthly payments, I advocate for all who wish, weekly even if they please, but not compulsory. I myself was requested by Sinhalese villagers a few months ago to keep 2 month's pay, yet there were people who once were paid every week. J. M.

TEA FREE OF DUTY IN WESTERN AUSTRALIA.

Colombo, Oct. 28.

SIR,—I beg to inform you, that I have received advices from Western Australia, that there is now no duty on tea entering that part of the Australian Continent.—Yours faithfully,

E. B. CREASY.

[Well done, the youngest Gold Colony!—ED, *T.A.*]

THE LABOUR QUESTION.

Kotmalie, Oct. 31st.

DEAR SIR,—It is difficult to understand what "Well-known Planter" would have us do unless it be to destroy our advance notes, write off all outstanding advances and give the cooly a fresh start with a clean sheet and compulsory monthly payments. A very drastic remedy most planters will admit and worthy of the strongest of rank Socialists.

How long might I ask "Well-known Planter" would such a happy state exist were each cooly and kangany relieved of his indebtedness to the estate? What would be the consequence of such action. I venture to say that the advance question would be in a far worse case six months afterwards than it is at the present time. Favourite estates would be overstocked with labour, while estates with new clearing work or long and unwieldy transport of tea chests, be deprived of the requisite labour and again have to resort to advances or if advances were illegal, offer increased wages which would be still more damaging the tea industry.

Coast Advances, we must give if we are to continue drawing on India for our labour supply. We must therefore have kanganies to recruit and pay out our advances.

The Coast cooly demands, and rightly so I think, an advance of money to leave with relatives who have been depending upon him for support, and this probably accounts to a great extent for the many inherited debts which we hear of among our coolies.

The "tundu" system is almost solely to blame for any difficulties we have with our labour force. We did very well without it twenty-five years ago. It is however an excellent thing in itself; but is in every instance abused both by planters and coolies, both using it at times as a threat when any difference, serious or trifling, arises.

It is this indiscriminate and thoughtless giving of tundus that has increased the indebtedness of our coolies, and the evil becomes worse each year as the busy plucking season comes round, and I see no hope of a better state of affairs till some combined action is introduced in regard to the issuing of tundus. Only the other day two gangs each of six coolies were engaged on tundus for R380 and R355 respectively for an estate in this district.

My experience of the cooly is that he prefers having his pay every two months. I have tried monthly payments and never found them satisfactory. On one occasion the money was in the bungalow to pay for one month and I was asked by the coolies at muster to return it to the Chetty and wait till they could be paid for two months.

Monthly, or even weekly payments will not keep Ramasamy out of debt. The greater his indebtedness, the more important a person he considers himself. Were he paid every Saturday, the whole in most cases would go on Sunday and after the manner of the English miner he would live on credit till the next payday.

A. F. S.

CEYLON TEA IN AMERICA.

DEAR SIR,—It was with great interest, I read Mr. MacKenzie's letter appearing in your columns of the 5th inst, regarding advertising in the journals, etc., in the United States.

I think that in your leader, you have sounded the key-note of success. Popular Lectures on the subject of Ceylon and Ceylon Teas, will, without doubt, be one of the best means of attaining the end in view. It is a well-known fact that lectures are very much appreciated by Americans of all classes.

I know of no more interesting series of lectures than the following would be:—

First—Ceylon, The Spicy Isle, Illustrated by Lime Light Views,

Second—The Products and Resources of Ceylon, Illustrated.

Third—The Rise and Progress of The Ceylon Tea Industry.

Fourth—The manufacture of Tea in Ceylon, compared with that in China, Illustrated by Lime Light Views and Diagrams.

Fifth. The value of Tea as a Dietetic, and the superiority of Ceylon Teas over China as such, owing to difference in Chemical composition.

Such a series of lectures could be adapted to suit all classes of Society from the most scientific, to babes and sucklings; yet all the while most interesting. One important point about lectures is that you could give your audience, samples of the articles which you were pushing either in the form of a really good cup of Ceylon's finest tea to wash down the substance of the lecture, or in the shape of a small packet with which they could prepare an afternoon cup for themselves after being instructed by the lecturer as to the proper method of preparing same. Pamphlets could also be distributed bearing the names and addresses of dealers in Ceylon teas in each town where the lectures were delivered. Many would willingly take up the job to stump the States in the interests of Ceylon; in fact I would not mind the job myself for even less than is quoted by Mr. McKenzie for advertising in one of the American Journals, provided travelling and other expenses were paid, and I think I could make some impression on the Yankees, and get them to turn from their "evil ways" of green tea drinking to the more healthful Ceylon Broken Pekoe or Pekoe, I am etc.

EXPERIMENTUM CRUCIS.

[We should favour rather, one good lecture in each town. Americans are too busy a people to go in for a course by the same lecturer.—Ed. *T.A.*]

VARIOUS PLANTING NOTES.

Tea Exports.—It is an interesting fact that if China keeps this season to a little less than her usual tea export of recent years, her total exports will almost exactly correspond with those of India and Ceylon. Thus the revised estimate for India gives 138 million (instead of 140½) of which it is estimated 124 million will go to the United Kingdom. The Ceylon exports are not likely to fall below 92 million and although all the Indian may not be shipped, the aggregate for the two countries cannot fall far below 230 million lb. Now this is very near what we estimate for China Exports:—

Russia say	90	million
U. Kingdom	45	,,
N. America (besides 45 million Japan's)	55	,,
Thibet and Central Asia (Brick tea, etc.)	15	,,
Australasia and Cape... ...	14	,,
Other places...	11	,,
	230	,, lb.
India 138 million + Ceylon 92 million =	230	,, lb.

Tea is the most encouraging and most profitable culture in Ceylon, writes a Ceylon journalist, who, though his name is Ferguson, which suggests North Britain, does what is generally supposed to be purely an Irish practice—to wit, he perpetrates a "bull," for he includes precious stones and plumbago under planting enterprises. With respect to plumbago, which is the only Ceylon metal (mineral rather) of commercial importance, the trade therein is not very prosperous, though between 300,000 cwt. and 400,000 cwt. thereof are shipped annually. Most of it goes to the United States, London coming next, while France and Germany have begun to take increasing quantities in direct shipments. Ceylon has been long famous for its precious stones—rubies, sapphires, cat's eyes, and moonstones—and these continue to be freely found. The digging and selling are in native hands, and the output is largely carried away by visitors or dispatched in registered postal packets. Mr. Ferguson, omits to mention that the natives are in the habit of selling inferior stones at fancy prices to travellers who know nothing of the value of gems, and think they are getting bargains. This fact possibly justifies the inclusion of the trade in stones among the "planting" industries of the island.—*Financial Post*, Oct. 22.

Indian Teas for the Colombo Market and the Ceylon Import Duty.—It is a little comical to read the letters on our back page in the light of actual facts:—(1) is it, or is it not the fact, that Ceylon produces some of the very worst, as well as some of the best teas under the sun? [To blend our good teas even with China or Java, much less Indian, teas would not be so bad as with some of the stuff occasionally sold in the Colombo market and twice rejected as unfit for human food at Melbourne.] (2) Do not the Ceylon tea planters live, to a great extent, by the blending trade? What are all the great tea sellers in London and the Colonies but blenders? How is our tea getting into Russia but by blending? Actually, Ceylon and China teas are at present sent to London, blended there and then sent back to Australia! Can it be said that the North Indian planters have not worked hard to make their teas known with their Calcutta and London Tea associations? and yet why are they not afraid to leave Calcutta an open port, although several million lb of China teas enter there for blending. Finally, it is absurd to suppose that the grand Port of Colombo, is to be shut off from its legitimate trade, as the port for Southern India and as the distributing port for Australasia. We are told that one solution of the difficulty is for Government to build large Bonded Stores for blending purposes. If so, the sooner they are built the better.

The Ceylon Forester for October is a useful number albeit mainly taken up with a review of Mr. Broun's Forest Report for last year. It would be well if the Department's experience so far, of the four or five best timber trees to cultivate at different elevations, were put briefly and clearly before our planting and agricultural community. In reference to the Sessional Paper called for on the Department, by Mr. Coomaraswamy, Tamil M.L.C., we have the following satisfactory criticism:—

This return, as at present compiled, shews a loss of R67,833·70 for the 5 years, but, as the Conservator points out, this is not the true state of the case. In his remarks we notice, however, that the Conservator has not credited the department with the increased value of timber in depôt from January 1890 to December 1894, which amounts to R62,901·61, nor does he mention under the head of capital, stores, &c., as we believe this includes the sawmill at Batticaloa, which cost about R10,000, we think this item might also be included in capital expenditure.

The figures are as follows:—

Total Expenditure			R2,199,635 37
Deduct Capital Account			200,826 74
			R1,998,808 63
Total Revenue ..		R2,131,801 67	
Free Grant ..		42,005 18	
Value of Timber in depôt on Jan. 1st, 1890	R196,732 00		
Value of Timber in depot on Dec. 31st, 1894	R259,633 61		
Increased value of Timber ..		62,901 61	
			R2,246,708 46
In favor of Department..			R247,899 83

The above figures shew that so far from the Forest Department not paying, the yearly average revenue derived is equal to R49,579·96 for the last five years, which, considering the increased protection given to our forests should be considered a satisfactory result.

Notes on Ceylon Birds are continued.

THE NATIVE HOME OF COFFEE.

When we are enjoying a fragant cup of coffee. It is pleasant to reflect that there is one country, though one only, where the coffee plant grows and flourishes without cultivation. This country—according to an Italian traveller—is Kaffa, in South Africa,* from which town, it is surmised, the plant took its name. "I affirm what I have seen," says this traveller, "namely, that Kaffa is the only country in the world where coffee grows spontaneously, comes to maturity, and produces perfect fruit without any cultivation at all."† At the present day, he continues, there is not a house in Kaffa which does not possess a piece of ground planted with coffee, and he himself, during his two years' stay in the place, had about three thousand plants in the ground, but that which grows spontaneously in the woods, producing without artificial means, was always esteemed the best. And, in fact, rich people, in order to have good and fresh coffee every morning, keep a piece of ground apart in their farms planted thickly with the forest trees, beneath which the plant thrives and bears better and more aromatic fruit than when in the open. Here the berries are gathered daily for the family consumption. Another advantage mentioned with regard to forest-grown coffee is that it is never subject to any malady, whereas the other suffers from a variety of diseases. Again, the wild plant germinates in a fortnight, while the domestic one does so after several months only. It is usually believed that there are various species of the coffee plant. Our informant, however, is of the opinion that there exists but one plant, which, nevertheless, according to the different methods of cultivation, undergoes a certain change. As, for example, in the wild and domestic plant; and, again, in that which is favoured by climate and soil, and that which is not. Much also depends upon the cultivator. The same species growing wild produces small berries, which become double the size when cultivated. It is also impossible, we are reminded, that one harvest can produce nothing but fine full berries; consequently the bad and the good are mixed together for sale, or sold separately at different prices by the coffee merchants. The small unripe grains have neither taste, nor smell, nor form. An apparent variety in coffee is likewise produced, according to the time employed in and the manner of gathering the grains at harvest time. Coffee requires several months to come to maturity; in Kaffa ripe berries begin to appear in September, and are fit for gathering in November. Any small or unripe berries remaining are equally gathered and given to the servants or sent away for sale. The Arabians are reported to be the best coffee cultivators, because they know how to gather the grains at the most favourable moment, and take great care in sifting and cleansing them to send them in good condition to the markets.‡ Consequently, our traveller maintains that the good reputation that Moka coffee has maintained is due solely to the care referred to, inasmuch as the products of this country do not differ in the least from that which is sown and cultivated in other parts.

What a pity it seems, then, that in a country where coffee comes to perfection in a wild state there should be neither roads nor means of transport for converting it into an article of commerce. These necessary aids to business are, however, wanting in Kaffa, it is said. Neither do they exist even for the interior of the African towns, or for the regions of the Oriental coast. Consequently the production is a source of little or no profit to the country, whereas it might be one of great gain to the inhabitants. The only purpose for which it is utilised is for domestic use, as everyone is accustomed to this beverage. If by chance the provision should not suffice for one family, it is easily made up for by a neighbour, in return for a measure of corn. The great ivory, musk, and slave merchants purchase a certain quantity, but only sufficient for their journey, or for presents to their hosts *en route*, or to obtain a free passage over one of the frontiers, never for selling. Less important vendors, who pass through the country selling wax, coriander, and other small wares, buy it for selling again, but in such limited quantities that no one in Kaffa cultivates and gathers in the berries in the hope of gaining anything by such transactions. And if, in time of war, even these small itinerant merchants fail to pass, the cultivators, not knowing what to do with so much coffee in the house, do not trouble to gather the grains when ripe. Another authority on this subject, M. Massaja, confirms the above statements, and, basing his opinion on the traditions of the Kaffas and the Arabs of Moka and Jemen, says that this plant, which the greater part of botanists assert to be a native of Arabia, comes instead from Kaffa, whence it takes its name. "And this," he continues, "appears to me probable, as Kaffa and the adjacent territory are, as far as I know, the only places where the coffee grows so spontaneously, and with such force of vegetation in the woods. And the plants which vegetate under the shade of the great forests are, according to the natives, of excellent quality, and not subject to any of the diseases which generally attack those which grow in the open country. How far the assertion of the Kaffas is true, says this writer, I cannot venture to say; it is a fact, however, that rich proprietors, in cultivating this shrub near their dwellings, always select the most shady spot; and if trees are scarce, they have them planted in a manner so as to form small forests.

There is not a house in Kaffa which is not surrounded by coffee woods or plantations, the products of which always surpass the quantity necessary for the family's consumption. When the coffee is fresh, the natives eat it fried with salt and butter, or make an infusion of it, as we do. The plant is propagated in two ways in Kaffa—by transplanting and sowing. In the former case, they generally wait for the rainy season. Then, proceeding to the forest, such plants as have taken growth in others half fallen to the ground, vegetating to the detriment of the larger shrub by robbing it of its nourishment, are taken up. Care is however taken not to loosen the earth adhering to the young roots, which are replanted in a free spot, in holes about twelve inches deep, so that not more than nine inches of the plant remain above ground, and in a slightly slanting position. The sowing of coffee takes place, as soon as the ripe fruit is harvested, in ground freshly ploughed and well manured. After one or two years, the young plants are transported to a spot where they will remain till the time of production is finished. A little while after the transplanting or sowing, the Arabs take care to exterminate all weeds and useless growths. The Kaffas, however, do not trouble themselves about

* No—rather North-East Africa or Abyssinia.—ED. *T.A.*

† So long ago as the early "thirties" a Mission from Bombay to the Court of Abyssinia described part of their journey from the Coast as being under wild coffee bushes laden with berries.—ED. *T.A.*

‡ This is absurd.—ED. *T.A.*

any weeds, except for the plants near their habitations, the result being that the weeds and parasites, increasing with all the force belonging to intertropical vegetation, often finish by suffocating the whole plantation. In Kaffa, as we are told, the coffee shrub reaches a height of from three to five yards. It begins to bear fruit, as in Arabia, about a year or two after transplanting, and three or four weeks after sowing. In the fifth or sixth year it attains to the maximum of production, and becomes sterile in the sixteenth or seventeenth year. In the Antilles or in Venezuela the plant bears fruit till the thirtieth or fortieth year. It is probable, however, says our informant, that if the plants were pruned at the base they would bear fruit in Kaffa for another five or six years. Contrary to the former authority, already quoted, Mons. Massaja says that the berries of the wild plant are somewhat larger than those of the cultivated ones; sometimes the pod contains but one grain, which, being free to develop itself at pleasure, takes a form almost round, and is called Moka by the coast merchants from the resemblance it bears to the coffee of Jemen. In Kaffa and the adjacent country the coffee selected for the consumption of the great dignitaries and the Court is preserved for two or three years in a dry place, because the older it is the more coffee develops its aroma and strength. That which is destined for commerce is sold before it is quite dry.—*London "Standard,"* Sept. 20.

THE PUTUPAULA TEA ESTATE CO. LTD.

At the annual general meeting held by the shareholders today, a dividend at the rate of 10 per cent per annum was declared:—

(*From Directors' Report.*)

Tea in bearing	391	Acres
,, ,, partial bearing ..	30	,,
Liberian Coffee	10	,,
Forest	90	,,
Grass &c.	25	,,
Grand Total	546	Acres

The Crop amounted to 132,389 lb. Tea (against an Estimate of 110,000 lb.) and 77½ bus. Liberian Coffee. The nett average sale price of the former was 47.36 cents per lb:—The latter realised R482.65. The net profit for the year amounted to R22,635 16, and the Directors recommend a dividend of 10 per cent for the year, carrying forward the balance R2,635.16 to the current year's accounts. A sum of R1,567·01 was spent in manuring a portion of the Estate, the benefit of which will be felt for a year or two, but the Directors decided to include the entire amount in the season's expenditure.

A small Down-draft Sirocco was purchased during the year, the cost of which, R3,520.65, was added to Capital Account. A further sum of R1,278.66 was spent in putting the existing Machinery in good order, and therefore it is not thought necessary to write off anything for depreciation this year, the property being worth more than the amount standing at the debit of Machinery account.

A sum of R1,500, has been allowed for improvements and repairs to the Superintendent's bungalow, and debited to capital account.

The estimated crop for 1895-1896 is 140,000 lb. Tea, on an estimated outlay on working account of R32,390. In addition to this expenditure, a further sum estimated at R9,110, will be spent in extensions, buildings, and manuring.

VARIOUS PLANTING NOTES.

TEA BULKING ON ESTATES.—With reference to the remarks of the *Grocer* on this subject, - see elsewhere—would it not be possible for our London contemporary to get the information and publish the marks of offenders? The fact of a threat of this kind would lead to greater care and it might be found that repacking in Colombo (after a local sale) was to blame.

THE NEW DIMBULA COMPANY, LIMITED.—The Shareholders in this Company may well be congratulated on the Report which the Directors present, as given elsewhere. It is particularly satisfactory to see the "C" shares coming in for a good dividend after a long period of waiting. The Company has undoubtedly got a valuable property and it is admirably managed.

THE OLD DUMBARA VALLEY will yet be a grand coconut planting district, a correspondent thinks. He has seen "over 1,000 acres in coconuts, on one property—a very wise planting. We'll live to see all the Valley a coconut grove yet—though cacao may still go on for a number of years, but the lack of moisture is against it and so can't compete with Trinidad if prices are to rule the same."

COOLIES IN COORG.—A writer in *Planting Opinion* says:—It is estimated that Coorg gives employment to at least 30,000 Canarese coolies in addition to the local labour and the labour from the coast. Of these Messrs. Matheson & Co., on their 7,000 acres in the Bamboo, employ 5,000 or thereabouts from six to eight months of the year. The 30,000 coolies, with their maistries, draw some 12 to 15 lakhs per annum in wages very nearly the whole of which eventually reaches Mysore either in payment of grain &c., or as surplus income which the coolies annually take with them to their country. The prosperity of Mysore is thus largely contributed to by the province of Coorg. —*M. Standard.*

THE NEW RUBBER TREE (*Sapium biglandulosum*) which Mr. Robert Thomson found to be indigenous in Colombia, South America, at elevations of from 6,000 to 8,000 feet, is one about which we should like to hear some more and to see the seeds made locally available through Hakgalla as soon as possible. We are quoting Mr. Thomson's interesting Report on coffee, cacao, cinnamon &c., as well as rubber in full into our monthly periodical; but meantime may mention that thousands of bales of the rubber have been exported from Colombia, but Mr. Thomson does not give the prize realized. He states however, that in a plantation formed of this rubber tree, the trees grew rapidly—trunks a foot in diameter in 6 years. It should just be the tree to try high up in Ceylon. Respecting the genus, we may quote from the "Treasury of Botany" as follows:—

SAPIUM—A genus containing about a score of trees or shrubs of the order *Euphorbiaceæ*, found in the tropics of both hemispheres, and all of them yielding a milky juice, which in some is very acrid and even poisonous. The leaves resemble those of the willow, the poplar, or the laurel, and at their point of union with the stalk are furnished with two round glands; while the small greenish flowers are disposed in terminal spikes, the lower portion bearing the fertile, the upper the sterile flowers.

S. indicum, a widely distributed eastern species, is known under the name of Boroo in Borneo, where, according to Mr. Motley, the leaves are largely used for dyeing and staining rotang of a dark colour. The acrid milky juice produces a burning sensation like that from a capsicum. The young fruit is acid and eaten as a condiment, while at the same time the fruit is one of the ingredients used for poisoning alligators. The ripe fruits are woody trilobed capsules, about an inch across, with three cells, and one oily seed in each.

The Milkwood of Jamaica *S. laurifolium*, receives its name from the milky juice which abounds in the stem, and is a source of annoyance to sawyers and others when the wood is green. *S. salicifolium* affords in Paraguay a bark which is used instead of that of oak for tanning. Most modern authors unite this genus with *Stillingia*, from which there are no reliable characters to distinguish it. [A.A.B.]

CEYLON SOILS AND MANURES.

In the year 1877, under an arrangement with the Ceylon Planters' Association, Mr. John Hughes, F.C.S., the Analytical Chemist visited Ceylon, and after touring through all the most important districts, undertook the work—lasting over three months in Colombo—of analysing the country's soils and the more usual manures, the permanent outcome of which labours was a goodly little guide-book of 150 pages.* We have recently been looking over this book, and we find that although it was written in the interests of coffee before the era of tea, it must, in the nature of things, be quite as valuable for the tea planter as it was for the coffee planter. Not that we ever heard of any sustained interest following its publication in coffee days: but that was not the fault of the book, but rather of the despair and losses which leaf disease caused to develop and fall upon all so rapidly after that date, everywhere in Ceylon. But now times are changed. In place of advancing despair, we have the strong forward march of prosperity and confidence; in place of a decaying staple over a limited area, we have a paying product spreading over an unlimited area of production, which cannot be all alike rich and fertile. It, therefore, seems to us that this book by MR. HUGHES ON SOILS AND MANURES will be found to be more valuable to the tea planter than, under adverse circumstances, it ever proved to be to the coffee planter. For it treats not only of the soils of many districts and well-known estates, but of the manurial values of all the available fertilizers ordinarily used. Such, for instance, as castor cakes, and other miscellaneous cakes, linseed, coconut, cotton-seed, bones, fish and compost. It teaches the use of lime and instructs all about limestone, calcareous sand, granitic limestone, gas lime, wood ashes and cattle manure and pigs and oxen, and how to feed them.

The fact that tea flourishes wherever coffee grew, as well as in places where coffee would not grow, is sufficient proof that all that was good for coffee must be good for tea, and any tea planter of a practical turn desiring a trustworthy guide in scientific cultivation cannot, we think, afford to be without a copy of this important little work (along with Mr. Cochran's Manual) bearing exclusively as it does upon Ceylon estates, soil, and climates. In his general remarks Mr. Hughes says:—"Bones, cake, and superior kinds of fish-manure are the materials which are best calculated to be economically used as fertilizers; also composts whenever the estates are sufficiently near a railway to allow of the application at a moderate cost." This broad rule applies equally to tea; for the cost of carriage to the estate, and distribution over the fields of the estate, must ever be the first items to consider after the cost of the article itself. How to discriminate in the selection of suitable fertilizers is a very important part of a planter's duty. Doubtless cattle, stable and line manures will still be the planters' best friends, but on a large estate they go such a little way that other fertilizers must be thought of, and no better guide in their selection than Mr. Hughes' book—supplemented by Mr. Cochran's Manual—can be got. We may add a couple of passages illustrating the usefulness of Mr. Hughes' little book. On the use of "Lime," which in some localities is available for plantations and which can always be obtained on railway trucks from the sea-side as burnt coral, Mr. Hughes writes on page 30:—

THE USE OF LIME.—During my tour, I was very much astonished at the small value apparently attached to the use of burnt lime, prepared either from coral or from some of the numerous local deposits of magnesian limestone, which very fortunately occur in irregular masses interspersed among the prevailing granite formations of the Island. At home the value of lime upon all arable soils is so fully recognised by practical agriculturists that it would be unnecessary to enter at any length into a discussion of its merits. At the request of the Planters' Association I addressed a short note upon the use of lime in some form as a desirable manure for coffee, and I have reason to believe that it will in future be much more extensively employed.

Lime is a necessary constituent of all permanently fertile soils, for it is a requisite element of the ashes of plants. It assists in rendering both the organic and inorganic portions of soils available as plant food. On all flat land rich in organic vegetable remains, lime will be found especially valuable for improving the physical as well as the chemical condition of the soil. Sir Samuel Baker in his book ("The Rifle and Hound in Ceylon") mentions in reference to Nuwera Eliya, that "an absence of lime in the soil, and the cost of applying it artificially prohibit the cultivation of all grain, and restrict the produce of the land to potatoes and other vegetables." The analyses of upwards of 50 samples of Ceylon coffee soils drawn from different estates, would incline me to think that the great huntsman need not have limited his remarks to the neighbourhood of Nuwera Eliya, when speaking of the poverty of the soil as regards lime.

The difficulty of applying lime artificially is one which is fast disappearing under the annual extension and improvement in the means of transit; good roads, railway extension, and plentiful labour supply, will soon enable the planter to obtain burnt lime at a moderate cost, say 1s. per bushel, delivered on the estate.

I am told that ordinary burnt lime applied at low elevations (by which I assume anything under 2,000 feet) has been found too stimulating. This fact should rather be taken as a positive proof of its quickening efficacy at once indicating the powerful action upon the previously dormant qualities of the soil. With the alternations of heavy rainfall, followed by tropical heat, the effect of burnt lime, naturally is very powerful, so that caution must be used, and a far smaller dose applied than would be considered sufficient according to English modes of application.

Also on "Cattle Manure," the other nearly universal fertilizer, albeit not always in sufficient quantity Mr. Hughes on page 90 has the following:—

CATTLE MANURE.—It is quite unnecessary if not superfluous to say anything in favour of this manure, its merits as a general fertiliser for all crops has been long since determined, but there are one or two points connected with its production and subsequent use, upon which a few remarks may be made. Ferguson's Directory, 1878, contains a very able article upon "The true way to keep Cattle for Food and for Manure." The writer, who is evidently an experienced planter, states that "Ceylon is perhaps the only country where *manure* is the sole end and object of stock-keeping, and Ceylon is a most fortunate country if the operation will pay, even when coffee is above 100/ per cwt." The author adds: "there seems to me but one solution of all these complications, and that is, to make *the stock pay for their food in beef*, and have the manure over and above." Certainly this is the way to make manure profitably; but can it be done? and if it cannot, then does it pay to keep cattle? Doubtless this question has been seriously and anxiously considered over and over again by planters, who have at length come to the conclusion, namely, that of the two alternatives, it is decidedly the better.

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* Special Report to the Ceylon Planters' Association by John Hughes, F.C.S., Fellow of the Institute of Chemistry of Great Britain and Ireland—to be got at "Observer" Office book-store, price v.p.p. R1·50 post free.

Unfortunately, however, in too many instances, such manure, which has entailed a large outlay to make, is allowed to remain several months before being applied. Large sums of money have been spent by proprietors in the erection of expensive cattlesheds, in the purchase of cattle and cake; and yet. when the manure has been made, it is left rotting in a heap, sometimes entirely exposed to the combined action of sun and rain, and nearly always liable to depreciation by drainage. I regret to state it, but frequently during my tour did I notice a dark stream wending its way from the manure heap to the nearest watercourse. It is unnecessary to point out that such dark fluid contains most valuable fertilising constituents. Voelcker, in his capital paper on "Farm-yard Manure," mentions that the drainings of dung-heaps are more valuable than the urine of domestic animals, such as the cow, horse, pig, &c. Coolies probably dislike carrying manure for many reasons, and it requires considerable energy on the part of the resident Superintendent to carry out this application of cattle manure at regular and frequent intervals.

TEA IN AMERICA.

NEW YORK, Oct. 9.

There is no improvement in the demand for invoices. New crop Moyune Greens are here and show very good cup quality, but in style of leaf are a trifle deficient. They bring very high prices. owing to small supply. Low grade Japans are very firmly held; also low grade Blacks particularly Formosas. On everything else it is a buyer's market. India and Ceylon tea is growing in favour. The aggressiveness and persistency of the campaign to introduce these teas is bearing fruit in an enlarged demand. One cannot help but admire the pluck and courage of Ceylon and Indian planters in pushing for a market in this country.

Today at noon the Montgomery Auction and Commission Company will sell 8,219 packages of teas, viz:—817 half-chests Moyune, new season's 3,508 boxes Pingsuey, new season's; 83 half-chests Japan, new season's; 489 half-chests Congou, including new season's; 79 packages India, Java and Ceylon; 510 half-chests and boxes Amoy; 625 half-chests Foochow; 2,108 half-chests and boxes Formosa, including "Fancy" invoice, seasons 1895-96.—*American Grocer.*

TEA AND ROADS IN THE WYNAAD.

CALICUT-GUDALUR ROAD.—Extract from letter from the Honorary Secretary, Wynaad Planters' Association, to the Chief Secretary to Government dated 24th September 1895 to which no answer has as yet been received.

With regard to para 6, the Executive Engineer states:—"With regard to the coffee industry I believe that many of the estates have been abandoned and that the traffic along these roads is small and light compared to that anticipated when the improvements to these roads was first commenced." I am again instructed to question the accuracy of this statement. As a matter of fact the great abandonment of coffee estates occurred before 1885 when very low prices for their produce prevented planters from coping with leaf disease. In 1885 the price began to rise again and since then we doubt if there has been any falling off in the Coffee trade (except yearly fluctuations) and at the present moment the abandoned coffee estates are gradually being planted up with tea (as has been done so successfully in Ceylon) and prosperity is fast returning to the district.

In para 7 of the Executive Engineer's report he says:—"I do not think they would have much difficulty in maintaining these roads, now that they have been thoroughly made in an efficient state for light traffic." We would point out that the Executive Engineer speaks only of light traffic and he makes no mention of the very large timber trade which has sprung up since the road was constructed from the foot of the ghaut [28th milestone] into Calicut which can certainly not be termed light traffic.

We venture therefore to submit that the statement of the case by the Executive Engineer, West Coast Division, is not verified by facts and we further venture to state that the circumstances in existence when the road was commenced are in existence now, and that the traffic along the road has not diminished during the last few years and will now steadily increase owing to the tea trade.

ECHOES OF SCIENCE.

The American "snow plant of the Sierras" (Sarcodes sanguinea), which rears its thick subtropical spike of red flowers out of the snows of the mountains is, according to Mr. Meehan, an American physiologist, who has specially studied it, not a parasite (like the Balanophores, which it resembles), but a saprophyte: that is to say, it is nourished by dead organic matters. It is an annual, germinating on the radicles of conifers, but afterwards drawing its food from the ground, into which it thrusts very deeply.

Ladybirds are sometimes killed by persons ignorant that they are a good friend to the gardener, because they eat small vermin. The dragon-fly, or "needle case," is another useful insect, which is killed in some districts under the belief that it has a sting. He is an enemy of house and other flies.

Mr. Walter Hough recommends the following composition for preserving specimens of natural history from the attacks of insects:—570 grains of a saturated solution of arsenic acid, 570 grains of essence of petroleum, 140 grains of alcohol at 95° of proof, 1 grain of phenic acid, and 1 grain of a 10 per cent. solution of strychnine.—*Globe.*

Dr. Backhaus's artificial human milk is cow milk carefully and cleanly collected, then fermented by rennet. The serum produced is sterilised and cream added according to the quality of "human" milk required. Dr. Backhaus strongly recommends dairies to sterilise their milk before sending it out to customers. To show the importance of cleanliness in preparing milk, Herr Backhaus states that the inhabitants of Berlin consume 300 cwt of cow-dung with their milk every day.

Some of the shade trees in American cities are being killed by electricity. American electricians are far from being as tidy and scientific in their operations as British or Continental ones, and it is common enough for them to run wires through the trees. The result is that in wet weather the electricity escapes from the wire and destroys the tree. On the other hand, weeds are now killed on American railway tracks by watering them and giving them a powerful shock of electricity.

THE MERGUI PEARL FISHERIES.

As a result of the report made by the Queensland expert on the Pearl Fisheries in Mergui, a batch of thirty Japanese pearl fishers have been engaged by the Burma Government for employment there. The revenue during the past year from this service was R29,247.—*S. F. Press.*

TEA IN WYNAAD.

Some correspondence has been taking place in *Planting Opinion* concerning the cost of production and the yield per acre of coffee and tea. A gentleman, writing over the *nom-de-plume* of "Wynaad," stated that in that district planters get 600 lb. per acre and can put the tea on the London market at 4d per lb. "Not quite a Novice" now writes, in a doubting spirit:—If this is so, Wynaad planters

"would do well to go in for some advertising, if they want to boom their district. The figures given by 'Wynaad' are until now unheard of in the history of tea." Our contemporary also observes that the figures are astounding. Be this as it may, we know on reliable authority that "Wynaad's" figures are well within the truth. By the way, *Planting Opinion* evidently does not possess a copy of Mr. Standen's excellent essay on "Tea Cultivation in the Wynaad," otherwise it would never have appended the foot-note it did. Our Coonoor fortnightly contemporary is doing excellent work for the planting industry of Southern India in collating planters' views on different subjects, but before it expresses opinions on the capabilities of any district it should make itself *au courant* with the latest information on the subject. In South Wynaad there are fields of tea which have given 1,200 lb. to 1,500 lb. per acre, a fact which has been stated in these columns more than once. The only reason why the Wynaad is not for its acreage one of the biggest tea-producing districts of the day is that it is unknown. Let it be boomed and a change will come o'er the spirit of the dream.—*M. Mail.*

DRUG REPORT.

(From *Chemist and Druggist.*)

London, October 24th.

CAFFEINE—The market remains firm. Sales were made by second-hand holders at 20s per lb, spot terms, in the course of this week. The manufacturers have booked orders for the total of their capacity up to December. Some short time ago they were still selling at 18s per lb for November delivery, but at that quotation no orders could probably be executed at present. For December delivery also the makers will only sell small quantities.

KOLA-NUTS - Fair West Indian nuts sold this week by auction at 10d per lb. Privately about 1d advance is asked on the recent rates.

QUININE tending somewhat easier. Several small sales of German bulk, B and S or Brunswick brands, are reported from second hands at 1s 1½d per oz. A parcel of 5,000 oz Fabbrica Lombarda in bulk has been sold at 1s 1d per oz. The market closes rather dull, with sellers of the usual brands at 1s 1⅝d, but no buyers.

VANILLA Mail reports from Port Louis, Mauritius, dated end of September, state that the market is bare of cured vanilla. No business has been transacted during the month. It is stated that the coming crop of Mauritius vanilla will be no less than 60 tons smaller than the last. A considerable business has been done privately in the last few days. Fine beans are very scarce, and high prices are asked. Good Mauritius, 6 to 7 inches, have been sold at 28s per lb. A parcel of Australian vanilla showing long but rather foxy shrivelled beans, which was bought in at the last auctions, has since been disposed of at 21s 6d per lb. Mexican vanilla, a variety not very often seen on our market, was bought in at the last sale at 40s per lb, which, however, must be regarded as a nominal price.

TEA BLIGHT, AND LEGUMINOUS PLANTS.

Dr. Watt announces a discovery which may possibly prove of importance to the tea industry. He found that tea gardens over which *Sa* (*Albizzia stipulata*) trees had been planted suffered far less from insects and mites than gardens where this was not the case. He writes:—"It soon had demonstrated to me that, far from this comparative immunity from blights being due to the shade afforded by these trees, the quality of the tea was distinctly lowered, though the volume afforded was increased. The *Sa* tree belongs to the group of Leguminosæ that according to the researches of investigators in Europe, should not produce the beneficial root tubercles discussed in the appended pamphet. I was for a time puzzled to account for the facts narrated until through the kindness of Mr. Buckingham, I was permitted to have a young tree dug up so that I might examine its roots. To my no small delight I found that these were covered with multitudes of the tubercles, and further that under the microscope these were actually found to contain the nitrogen-feeding bacilli. I extended my researches in this direction, and found that in Assam very nearly the whole of the members of the Mimosæ (the sub-order to which the *Sa* belongs) also produce root tubercles. I shall thus have to amend the review of the literature of that subject (as given in the pamphet), and the Mimosæ to the Papilionaceæ as forming beneficial tubercles on their roots. But I was led to the practical consideration, and one that I now regard as almost of supreme moment to the tea industry that the cultivation of a herbaceous-leguminous plant to be hoed in as green manure would secure the strength to resist many blights without entailing the disadvantage of the shade given by the *Sa*. I accordingly recommended the Assam planters to sow in October and hoe in about February a crop of Matti Kalai or some other of the numerous pulse crops common to the neighbourhood. Many of my Assam friends have given practical effect to this suggestion (Mr. J. A. Thompson of Ligri Pukri more particularly) by examining all the wild or cultivated plants of the kind indicated in order to discover a quick-growing species with a copious production of root tubercles. I need only add in conclusion that the principle involved in this recommendation is identical with the time immemorial experience in the value of Clover in the agricultural rotation of crops pursued in Europe. By growing a herbaceus leguminous crops for a few months on the soil, some attempt is made to combat the evil effects of a perennial cultivation of the same plant on the same soil."—*Pioneer.*

PROSPECTING IN THE "FIFTIES."

NORTH OF KANDY: PART II.

(*By an Old Planter.*)

The

SHADES OF EVENING

were fast closing around us and steady rain began to fall as we hurried along the jungle bridle-path, which led up to the new clearing, and soon a disc of light was visible in the distance, and then we alighted at the middle of a little coffee plantation; but it was not roaded, and we did not know which way to go. Peering into the distance before us we espied something big and high and white, and climbing over the trunks of forest giants prostrate on the ground discovered to our dismay that it was only

A GREY-COATED AND PRODIGIOUS BOULDER

and which we had fondly hoped was a cottage with white-washed sides. What was to be done? Here we were in a sad fix,—not a human voice to be heard, nor a building of any kind to be discovered, and we knew not which way to proceed, so we wandered on and on over planted clearings, till at last I fancied I heard the sound of a Tamil chant and then the thud of the rice-pounder, and it was so, and soon we reached a long set of

THATCHED LINES

and found Minatchy and Ramaswamy happy and lively and contented even in this lone and unroaded region, and guided by one of our dusky Tamil friends, we reached the gable end of another set of lines where resided our nautical host. "Who visits my cabin at this time of night, I wonder—friend or foe?" in a cheery tone he enquired. "Come in and get shelter from the rain." Right glad were we for his

HOSPITABLE INVITATION;

and then he gave us a brew of genuine Congou—all he had to give—we smoked the pipe of peace and listened to sailors' yarns, redolent of sea waves and white squalls and typhoons. Early next morning we started for

THE JUNGLE LOTS

some 2 or 3 miles away, and as we travelled over the new clearings I was delighted to see how sturdy and healthy the young coffee trees looked, springing up from a rich fertile loam, soft and springy beneath our tramp. As we proceeded, I noticed the Lagalla district—most of it, at any rate, had an unbroken and ominous descent, as far as the eye could

pierce, and right down to the Mineriyawa Lake—which as an inland sea—shone like a burnished silver disc in the very far distance. Soon we reached our destination, and duly inspected the lots for sale. It reminds me of

ONE FINE LOT

especially, with a splendid outlook, gentle slope, covered with forest trees of say 2 or 3 hundred years' growth. What a temptation it was to a poor, but industrious coffee planter in those long-ago days! But I remembered the warning I had given me: "Take care, it may be wind-blown," and I thought of the rapid and unbroken descent from the top of the Lagalla hills to the flat and outlying lowcountry. I enquired of our guide, if the district pleased him, and what were

ITS FUTURE PROSPECTS

as a coffee district. A shrewd sort of expression came over his face and he said only in a whisper. "Howling winds, three months on bud, trees stripped of leaves; berries size of an ordinary pea; hungry wolves howl around my wigwam for 6 or 8 weeks at a certain time of the year; rain, yes, torrents of it. The coffee tree may stand: but persistent gales of wind are death-blows to the tropical coffee planter's prospects." On our

RETURN JOURNEY

with a broiling sun overhead, I noticed as we neared Ratotta that the plant yielding

GINGELLY OIL

called in Tamil by coolies Nalyenna, was grown in native gardens, and onwards at places most of the way I think to Matale; and I was pleased to see the coffee shrubs grow well on the new clearings along the river's bank, as we crossed over it. As we arrived at

RATOTTA

which consisted then of a tiny Resthouse, Post Office, and store, kept by a Mr. Bone, if memory serves me right, we were lucky enough to get seats on Her Majesty's Royal mail-cart—a coffin-like vehicle—made to imitate, I suppose, the gay scarlet and gilded mail carts that used to start from St. Martin's-le-Grande, years ago, and a very poor model it was. Anyway, we were right glad to get rid of our stumbling ponies, and get a lift on the Ratotta mail-car to the Matale Resthouse. In the evening we met a few friends, the Government Surveyor and one or two others, unlucky proprietors of Lagalla lands; and afterwards I was assured that from Lagalla right down to Nitre Cave, persistent and cruel winds had ruined many promising young coffee estates, in fact almost snuffed out the coffee enterprise in those storm-swept regions; which with good soil, could only be expected to grow root crops, such as ginger, arrowroot, &c.

PLANTING AND PRODUCE.

A Gold Medal for Indian Tea.—In connection with the Empire of India Exhibition it is gratifying to hear that a diploma for a gold medal has been awarded for the exhibition of Indian teas made by the Indian Tea Association under the direction of Mr. E. F. Langdale. The diploma, which is in course of preparation, will be delivered at an early date.

A Nation of Tea Drinkers.—"The extent to which Ceylon and India on a small scale packet tea is pushed," writes a correspondent, "is remarkable. In remote villages in Cornwall and in small inland hamlets all over England you will find some form of Ceylon or Indian packet tea. The cottager when he can afford it takes his tea with regularity, and the village alehouse must suffer, I should imagine; for good or evil we have become a nation of tea drinkers." We agreed with our correspondent. Certainly the representatives of Ceylon and India have worked hard and well to push their products.

Then and Now.—Those who object to the tea drinking ways which now prevail would no doubt have appreciated the customs of the Restoration period. In a new volume of "Seventeenth Century England" just published, we find that people then had a "morning drought" of ale, with, bread, butter, and radishes for breakfast. Dinner was at 1 o'clock, and so early were the hours kept that the debauch often began then. There were plenty of drinks available. More than 12,000,000 barrels of beer were brewed in 1688; the one spirit in common use was brandy; of Spanish wines, canary, sack, malaga, and sherry were common, as were claret, burgundy, and Rhenish wines. Water was scarcely ever drunk, even children drinking small beer. In town, coffee was usual, tea rarer. Pepys's wife was informed by the "potticarry" that tea was "good for her cold and defluxions." Merchants went to work at six a.m., and in summer the majority of folk were in bed at sunset.

Gratifying Evidence.—The tabulated statement of the results of the working of Indian tea companies compiled by Mr. George Seton and published in our columns has called forth many favourable comments in the newspapers on the position and prospects of Indian tea. The *Grocer* says, referring to Mr. Seton's tables: "Both financially and commercially the British industry in tea affords very gratifying evidence of its growth and prosperity, as nearly all the companies have been doing well, and the rates of dividend in some cases have been exceptionally high. In this respect the Assam, the Brahmapootra, and the Jorehaut with their payments of 20 per cent. take the lead, followed by the Chandpore, the Lebong, and the Moabund concerns with their 15 per cent dividends. Next to these were the tea-growing districts of the Dooars, the Leesh River, the Attaree Khat, the Doom Dooma, the Doloo, the Allynugger, the Borjuli, the Chubwa, the Dapoota, the Jhanzie, the Jokai, the Lungla, the Mazdehee, the Moran, the Sephinjuri Bheel, and the Shumshernugger, where the dividends earned and paid have ranged between 10 per cent. and 12½ per cent. Other tea companies have distributed in this way rates varying from 5 per cent to 8 per cent., and in this group may be included the Baraoora, the Borokai, the British Indian, the Cachar, the Chargola, the Darjeeling, the Dejoo, the Endogram, the Indian of Cachar, the Land Mortgage Bank, the Majuli, the Mookhamcherra, the Noakacharee, and the Scottish Assam estates. A few gardens pay only from 2½ per cent to 4 per cent profit, and in one instance there was simply nothing to hand over to the proprietors. As regards the several crops, the aggregate weight of tea raised by the forty companies enumerated was 39,612,815 lb for the season 1894, and among the largest contributors to this grand result were the planters representing the Assam Company, the Jokai, the Dooars, the Assam Frontier, the Land Mortgage Bank, the Brahmapootra, the Borjuli, the Jorehaut, the Doom Dooma, the Chargola and the Upper Assam interests, producing a yield of from 1,248,458 lb to 3,251,127 lb each. The plantation yielding not more than from about 500,000 lb to 900,000 lb of tea apiece, though not necessarily associated with the least prosperous of their class were the Allynugger, the Attaree Khat, the Baraoora, the Borelli, the Borokai, the British Indian, the Cachar, the Chandpore, the Chubwa, the Dapoota, the Darjeeling, the Dejoo, the Doloo, the Eastern Assam, the Endogram, the Indian of Cachar, the Jhanzie, the Lebong, Leesh River, Lungla, Majuli, Moaband, Mookhamcherra, Moran, Noakacharee, the Scottish Assam, Sephinjuri Bheel and the Shumshernugger. The smallest crop grown—185,090 lb—was in the district of the Mazdehee Company, but such a drawback if it may be so termed did not prevent the cultivators from earning a dividend of 10 per cent and instances of this nature could be easily multiplied."—*H. & C. Mail.*

Royal Gardens, Kew.—Bulletin of Miscellaneous Information for October has for contents:—New Rubber Industry in Lagos; Diagnoses Africanæ: VIII.; Citrus Fruits in Sicily; Miscellaneous Notes; Weather and Attendance of Visitors in September; Botanial Magazine; Queensland Cherry; Dried Plants from British North Borneo; Fruit of Sararanga; Hortus Fluminensis; Liberian Coffee.

PERAK PLANTERS' ASSOCIATION.

A meeting was held at Taipeng on Nov. 2nd, Mr. H. A. W. Aylesbury in the chair.

The following bye-law was proposed by Mr. Gibson, and seconded by Mr. Stephens:—

"That no coffee plants or seeds tendered for sale by natives shall be purchased by any member of the Association unless the seller can produce written proof that the same are his *bona fide* property, or that he has been duly authorized by the owner to offer such plants or seeds for sale. Breach of this bye-law to involve a fine of $50, to be paid into the funds of the Association by the offenders."

A discussion took place in regard to a proposal, which originally emanated from the Selangor Planters' Association, for a Central Association, or amalgamation of all the planters' Associations in the Native States and Province Wallesley. The meeting was unanimously in favour of this, and the Honorary Secretary was asked to communicate with the Selangor Planters' Association with a view to bringing about this much desired object.—*S. F. Press.*

A VETERAN PLANTER'S VISIT.

Mr. J. E. Todd, Meleny Estate, Assam, one of the pioneer tea planters in that country is at present on a visit to Ceylon, his second since 1861. Mr. Todd who was a passenger by the M. M. Co.'s ss. "Oxus," left for upcountry on Sunday morning on a visit to Mr. Ansthruther of Tillicoultry. He will then proceed to Nuwara Eliya and revisit the places with which he is familiar in that district. Mr. Todd will make a sojourn of from 8 to 10 days, remaining in the Island till the arrival of the "Clan Matheson," on board of which he will meet Sir John Muir, head of the firm of Messrs. Finlay, Muir & Co. with whom he will travel to Calcutta.

SELANGOR PLANTERS' ASSOCIATION.

Minutes of a general meeting, held at the Selangor Club, on Saturday, 26th October, 1895. Present: Messrs E. V. Carey, (Chairman), C. Meikle, E. B. Skinner, R. Meikle, R. Kindersley, R. C. Tollemache, L. Dougal, H. Rowe, M. Stonor, C. Glassford, B. Nissen, F. A. Hurth, H. M. Darby, H. Hüttenbach, C. Jackson, and Tom Gibson (Hon. Secretary).

Mr. Forsyth, having expressed his wish to retire from the Committee as he no longer intended to reside in Selangor, Mr. H. Hüttenbach was elected in his place.

Correspondence with the Perak Planters' Association, *re* the proposed Central Planters' Association, having been read, the Chairman explained to the meeting that, taking advantage of the presence of Mr. T. H. Hill (Chairman of the S. U. P. A.) in Kuala Lumpur, the Committee had invited him to meet them on the 15th October, and it was then resolved that the Hon. Secretary should write to the S. U. P. A. and arrange a convenient date for representatives of the two Associations to meet in Kuala Lumpur and that notices be sent to planters in Johore and Perak.

GERMANY IN AFRICA.

Under this heading a home contemporary gives interesting information regarding German East Africa. The colony of Togoland which has only 73 white inhabitants, is made up of 19 officials, 22 missionaries, and 32 traders, who include six Frenchmen and four Englishmen. The value of the imports amounted in 1893-94 to £127,937, and of the exports, which consisted of palm nuts, palm oil, gum, ivory, skins and hides, ground nuts, and coffee, to £160,571.

In the Cameroons the white population numbers 231. The imports for the official year 1893-94 amounted to £232,131, and the exports to £238,707, the exports being similar to those from Togoland, with the addition of indiarubber, ebony, and cocoa. Reference is made to the official report on German East Africa. It is stated that in German East Africa the white population numbers 215. The exports of ivory rose from 242-449 lb. in 1893-94 to 317,777 lb. (14,692 tusks) in 1894-95. The fear expressed in the official report a year ago that the amount of ivory exported through German East Africa would diminish in quantity in consequence of the competition of the Independent State, and of British Central Africa, Uganda, and British East Africa, "which are all striving to attract the ivory trade to their own export markets,' does not therefore, as yet, appear to be well founded.

INDIAN AND CEYLON TEAS.

LONDON CONDITIONS OF SALE.

An alteration which comes into force today (Nov. 1st) has been made in one of the clauses for regulating the sale of Indian and Ceylon tea by public auction. We give below the Clause (4) as it formerly stood and as now amended:—

OLD CLAUSE.	NEW CLAUSE.
These teas will be ready for delivery on the day of sale (excepting packages requiring coopering, which will be completed without delay), and three clear working days from that date are to be allowed for delivery of weight notes. The buyer to have the option of refusing to accept any lot or lots for which he cannot obtain the weight notes by 6 p.m. on the third day, by giving a written notice to that effect to the selling broker on the following morning. Missing packages, if equal to bulk, and not more than 5 per cent., are exempted from this condition, and are to be taken by the buyer at the original price and prompt if tendered within fourteen working days from date of contract.	These teas have been weighed, inspected, bulked (if necessary) and tared, and will be re-weighed, papered, and leaded down by the evening of the day after the day of sale. All packages will be nailed down within six days. Delivery will be given on the day after the day of sale, and up to the delivery of weight notes, on notice being given (in writing) the day before it is required to the selling broker and warehouse keeper. The buyer to have the option of refusing any packages as to which the above conditions have not been compiled with. Three clear working days are to be allowed for delivery of weight notes. The buyer to have the option of refusing to accept any lot or lots for which weight notes have not been delivered by the evening of the third day, by giving a written notice to that effect to the selling broker on the following morning, if, on application, he cannot then obtain them. Missing packages, if equal to bulk and not more than 5 per cent., are exempted from this condition, and are to be taken by the buyer at the original price and prompt if tendered within fourteen working days from date of contract.

—*London Paper.*

How to Renovate Brown Boots.—First give the boots a tight treeing up either with trees or soft paper (the former method is the best), then give them a good wash with soap and lukewarm water, but do not sodden them. This can be done with a sponge or very soft brush. Do not brush too much in one place, but only till the dirt is all off. When this is done, put them under a tap, or give them another wash with warm, clean water without soap. It would be best now to give them a wash with some scouring fluid, but in either case, when quite dry, give them a good creaming. It is always wise to treat brown leather as above before it gets too dirty, as continual creaming with the dust on helps to impoverish and wear away the grain and beauty of such leather, and so causes them to crack and show dirty lines when creamed.—*From "Work" for September.*

THE AGRICULTURAL SCHOOL:—IN DEFENCE.

If the Unofficial Members of Council have not been very successful in their legislative battles, they have sometimes done good service in drawing the attention of the Government to what they believe to be errors of policy on the part of the Executive and thereby have brought the light of criticism to bear upon defects where they are alleged to exist. As we have already stated, we are rather at a loss to assign a motive for the vigorous attack which the Tamil Member made on the Agricultural School, particularly when we recall the fact that his zeal for the security of our finances seemed to forsake him during the debate on the Arrack Rent Sales. Mr. Coomaraswamy's plea for the suppression of the School was supported by two arguments, first, that the expenditure on the institution was excessive, and secondly that the School itself was a failure. In support of his first argument the Tamil Member quoted figures from the Blue Books to the effect that the net expenditure on the Agricultural School for the past three years was as follows:—

In 1892	..	R12,007·41
„ 1893	..	R12,728·11
„ 1894	..	R12,370·75

Now we find on reference to our Blue Books for three years that included in the above is a sum of R5,000 paid to the Colonial Veterinary Surgeon during each year. Why this sum should be included in the expenditure on the Agricultural School it is difficult to say. We should be sorry to think that the work of the Government Veterinary Surgeon was confined to the Agricultural School; and indeed if this be so, so large an expenditure on the salary of a teacher would not be warranted. We know, however, that this office of Veterinary Surgeon is for the whole colony, and that the Surgeon's special work lies in the study of large questions concerned with the stock of the country—especially with reference to the suppression of cattle disease. We presume that the Veterinary Surgeon besides, conducts a class in the Agricutural School; but it is nevertheless most unreasonable to debit the School with the whole salary of R5,000, when the salaries of the Superintendent and his staff of three Assistants aggregates not much more than R5,000! We should have thought that it would have been more consistent to attach the Government Veterinary officer, as a "Colonial Surgeon," to the Medical Department, where he ought to prove more useful under an able administrator like Dr. Kynsey. Indeed, it appears quite anomalous that a Colonial Veterinary Surgeon should have the Director of Public Instruction as his chief. If the change we advocate is made the veterinary class in the Agricultural School could still be taken by the Colonial Veterinary Surgeon or even by the Government veterinary scholar who had such a brilliant career at the Bombay College, and who we believe is already on the staff of teachers. Taking away the salary *at least* of the Government Veterinary Surgeon (for there may be other expenses for which he is responsible) from the cost of working the Agricultural School, we find the figures quoted by Mr. Coomaraswamy reduced to the following:—

1892	..	..	7,007·41
1893	..	..	7,728·11
1894	..	..	7,370·78

The Veterinary Surgeon's salary, therefore, forms 40 per cent of the expenditure on the School and as it should come under another head altogether, the above would be fairer figures for the Tamil and Mercantile members to take in reckoning the cost per student and in comparing the total cost with that of the Technical School or Royal College. Mr. Coomaraswamy's assumption that the expenditure per year for the last 11 years was over R12,000 is quite unwarranted. Even if he, through an oversight, included R5,000 in 1892, 1893 and 1894, he should have remembered that there was no Veterinary Surgeon before 1892, and that the Superintendent, Mr. Drieberg, joined the staff only in 1889. The real expenditure for the 11 years is thus nowhere near R140,000 or R150,000, but more like R60,000 or R70,000. It is very surprising to us that there was no official—not even the Treasurer or the Government Agent of the Province—sufficiently up in the subject to correct the unofficial speakers! If the paid members of the Executive and Legislative Councils do not study the annual Blue Books, who can we expect to do so?

There is another point to which we may direct attention and that is that the Training School and Practising School are bracketed under the head of Agricultural School, though the expenses of the three are given separately. From this it would appear that the Principal of the Agricultural School is Superintendent as well of two other Schools. If so, then surely the salary of this officer should be divided proportionately in estimating the expenditure on these three establishments? We are further reminded of the existence of the Government Dairy—a separate institution from the School—against which in all reasonableness a large slice of Mr. Driebergs' salary should be debited. If not, the alternative must be that the proceeds of the Dairy should go to swell the receipts from the soil. The Director of Public Instruction in his Administration Report for 1894 speaks of a number of students being refused admittance into the Agricultural School; this would indicate that only a limited number is taken on, and if so the small numbers are not due to lack of applicants for admission. It would appear from the total receipts that the fees charged at the School are unduly low, and indeed the Superintendent in his Report for 1894 recommends that they should be raised. If this suggestion be acted on, we may hope to see the net expenditure on the school still further decreased.

Let us now refer to the second argument put forward, namely, that the School is a failure. But how has Mr. Coomaraswamy set about ganging the success or failure of the institution? It would seem from the character of the return called for, that the hon. member looks upon the School as an institution for training Agricultural Instructors and nothing more. It is true that the School was started on a very small scale at first and that Mr. H. W Green, who was its initiator, tried the experiment of sending out a few Agricultural Instructors to certain districts. Whether this experiment was a success, is doubtful. We have heard of a few of these Instructors doing good work under the immediate supervision of progressive revenue officers, and we have also heard of some making no headway at all—left to themselves receiving no help from village authorities, *sans* funds, *sans* labour, *sans* land, *sans* everything that is necessary for establishing anything like an agricultural station. Indeed we believe that the attempt to dissemminate agricultural education through Instructors has been a half-hearted one, owing (1) to the withholding of the expenditure that must necessarily be involved in carrying the system forward with any effect, (2) to the lack of support from village and district authorities, (3) to the opposition of conserva-

tive natives, and (4) the ill-considered rationale of the work of the Instructors themselves. The prime error in connection with this last cause of failure was the idea that the mission of the Agricultural Instructor was to force an English-made plough on the native paddy cultivator—to act indeed as an agent for Howards of Bedford—and that the central School in Colombo had concern only in this mission and took no heed of the unlimited sphere of usefulness indicated in the terse but significant motto of the Royal Agricultural Society of England:—"Practice with Science." We understand that of late since the number of Agricultural Instructors has been reduced, it has been decided to appoint Instructors only on the demand of revenue officers, who see an opportunity for fruitful results and who are prepared to take a personal interest in the work of the officers placed under their control. We have the further assurance that the interest and industry of these Instructors will, in future, be more closely enquired into by the provision—announced at the Agricultural School last prize-day—that the Superintendent has been appointed to inspect their work.

But we hasten further to say that the value of Agricultural Education is not, in our opinion, to be estimated by the success or failure of some half-dozen young men sent out as pioneers in a discouraging though meritorious enterprize; and we would further quote a passage—from Mr. Drieberg's Report, published some two years ago—which we commend to the notice of the Hon. Tamil Member who in his speech last Wednesday remarked with the complacent satisfaction of the rabid as well as ignorant conservative:—"*We* have got on well heretofore, and we wish to go on as before":—

In a paper on "Technical and Agricultural Education in the Colonies," read before the Royal Colonial Institute, the writer observes that "he would be a bold man who in the last decade of the nineteenth century would in the slightest degree undervalue what science can and does so largely give to agriculture; or who would argue that because yonder farmer has been a successful man, and yet could neither read nor write, he owes that success to the absence of education. In these days, education (not only in the principles which underlie his art but in the workings of the markets of the world) is so largely used against the farmer, that for the latter to neglect it would be the height of foolishness." He then goes on to show that as with the lawyer or medical man, soldier or sailor, a knowledge of the principles of his art is necessary to the Agriculturist. John Chalmers Morton, one of the leaders in the agricultural world, said when speaking before the Society of Arts:—"The sound preliminary education for which I am to argue, is not only the foundation-stone of a future building—it is the seed of a future life, with influence and guidance in it, as well as mere security and strength. And the agriculturist, whatever the distinctive features of his occupation may be, will, I believe, quite as much as any other busy man, benefit by an education which may open his eyes a little wider than they are at present to matters which really concern himself, though they may seem outside the limits of his day's work. Such are the opinions of those who have made a study of this subject; and such opinions are the securities for the benefits of agricultural education: I do not give them by way of apology for the instruction imparted here.

There can be no manner of doubt in the mind of any man of enlightenment that Ceylon, like every other country and colony, is all the better for the existence of a central School of Agriculture just as it is in having a Botanical Department, an Archæological Commission and a Museum; to keep us in touch with the changing times; to diffuse—it may be but slowly—knowledge of the great principles of scientific agriculture, of the natural laws which control and regulate plant-life, and to use the knowledge of both for local ends; to be able to note and if possible, utilise the results of recent research; and to be a means of communication with the Agricultural world around us. When we consider the large scope of Agricultural Education and the pettiness of the questions raised (such as that referring to local experiments with Agricultural Instructors) we cannot but decide that to give up the School would, as we have stated before, be "a backward step indeed and one not to be thought of."

One thing strikes us as very comical, namely the persistency, with which Unofficial Members, apparently encouraged by the Government, seek for objects of attack and possible Retrenchment (?) *outside the scope of the Retrenchment Committee's Report.* Surely their first duty is to insist on the recommendations in that Report being attended to and to hammer away at them, in season and out of season, until something is done. It is an uncommonly weak if not miserable thing, to seek out a struggling young institution with poor funds to back it in the interests of the native community—for the Agricultural School is purely for the benefit of the Ceylonese—and to strike a blow at such a School; while big officials and extravagant institutions are left unnoticed, and encouragement is given to throw away at one stroke some R250,000 of Arrack revenue—enough, by the way, to pay for the Agricultural School, for more than a quarter of a century. And yet there was no one in the Legislative Council to remind the Tamil Member of this fact!

THE CEYLON HANDBOOK AND DIRECTORY.

An old resident and good judge of such work writes:—

I write hurriedly, but can only say how pleased I am with the Directory—its outward appearance, and its very full and varied contents, so far as a glance has enabled me to judge,—and how thankful to have received an early copy. I have always, even before I took to planting, been impressed with the general and special utility of two publications, both issuing from the *Observer* Press—the Directory and the Tropical Agriculturist. My admiration of them and appreciation of their value have not diminished by closer acquaintance; they have rather increased; but a new feeling has possessed me this year—wonder at the marvellous industry and perseverance which could put so big a volume through the Press, with all the cares of a daily paper on your shoulders. More strength to your hand and elbow!

BRIQUETTES OF COFFEE HUSKS.—The Soerabaia *Handelsblad* says, that at the last meeting of the Malang Coffee Planters' Association it was resolved to offer a prize for the discovery of a universally practicable and cheap binding substance for the preparation of briquettes of coffee husks. On account of the gradually increasing scarcity of firewood on the estates it is very necessary to look out for a substitute; and upon some estates coffee husks in a dry state are used for fuel. They burn up too quickly, however; and at the same time cause risk of fire through the quantity of sparks.

THE LANKA PLANTATIONS COMPANY, LIMITED.

DIRECTORS—George Allen, Esq., Chairman, William Anstin, Esq., Henry Bois, Esq., and Edward Pettit, Esq.

AGENTS IN COLOMBO—Messrs. J M Robertson & Co.

SECRETARY—Mr. Charles M Robertson.

Authorised Capital, £200,000, in 15,000 ordinary shares of £10 each and 5,000 preference shares of £10 each, of which only 1,470 have been issued.

REPORT to be presented at the fifteenth ordinary general meeting of the Lanka Plantations Company, Limited, to be held at the office of the Company, on Wednesday, the 13th November, 1895, at 12 o'clock noon.

1. The Directors now submit their Report for the twelve months ending 30th June last, together with the Balance Sheet and Accounts of the Company made up to that date and duly audited.

2. The Coffee Crop shipped to London was cwts. 1,371, against cwts. 789 last year, and realized £6,561 6s 2d net. The acreage under Coffee alone was 210 acres, and the trees after maturing a good crop are reported to be in excellent heart and condition. Patches of Coffee scattered about the fields of Tea added considerably to the total yield this year, but so large a crop can hardly be expected again.

3. The total crop of Cocoa gathered on Yattawatte amounted to cwt. 1,214, against cwt. 979 last year, and realized £3,038 10s 11d. There was a further drop in the market during the year, but even the very low rates now ruling leave a good margin of profit. During the season a further acreage has been planted, and 42 acres of available land adjoining the estate purchased. The cost of the new planting and the land have been charged to Capital Account.

4. The Tea received from the Company's estates amounted to 528,048 lb., and has been sold at an average of 8d per lb. net, realizing £17,507 3s 2d. Last year the Company received 518,136 lb., which was sold at an average of 7¼d net, and realized £15,873 5s 5d. The total acreage under Tea now stands at 2,161 acres.

5. The following Statement shows the acreage and state of cultivation of the Company's Estates on the 30th June last:—

Estate	Coffee	Tea	Cocoa	Grass	Chena and Patana	Forest and Timber Trees	Total
Ampitiyakande, Arnhall	50	414	-	4	167	70	705
Fruit Hill	-	225	-	-	12	-	237
Fordyce, Garbon, Gongalla and Paramatta	-	767*	-	34	-	135	936
Rappahannock	23	302*	-	31	30¾	87	473¾
Rillamulle	-	232	-	-	6	20	258
Thotulagalla	137	221*	-	4	109	84	555
Yattawatte	-	-	620	95	169	105	989
	210	2161	620	168	493	501	4153¾

* Partly in Coffee.

6. The net Profits for the past year amounted to £11,378 13s. 4d., to which must be added the sum £458 17s. 6d., the balance brought forward from the year 1893—94, making together £11,837 10s. 10d.

7. The Directors propose to take advantage of the unexpected increase in the net proceeds of the coffee crop to write off from the suspense account the sum of £3,714—being not only the one-tenth usually written off, but also the sums of £799 and £1,021 which, from circumstances, the Board was unable to write off in the years 1888 and 1889. This will enable the Directors, at the end of the current year, to strike out of the suspense account the sum of £4,544 5s, 7d., charged in the year ending 30th June, 1885, which by these payments will have been entirely paid off.

8. Having already paid a half-year's interim dividend on the Six per Cent. Preference Shares to the 31st December, 1894, amounting, less property tax, to £426 6s., the Directors recommend the payment of the dividend on these Shares to the 30th June last, requiring, less property tax, a similar amount and they further propose a dividend of 8s per Share, free of income tax (being 4 per cent. per annum), on the Ordinary Shares, amounting to £6,000, carrying forward a balance of £1,270 18s 10d to the next account.

VARIOUS PLANTING NOTES.

A NEW PLANTATION CO.—The Poonagalla Co. formed to take over Sir George Pilkington's properties is announced by this mail. The price paid for the four properties with about 1,200 acres in cultivation and as much more in reserve, cannot be considered dear at £27,050. In fact it ought to be quite a bargain for the Company and good dividends ought to result. Sir George will continue to be the chief shareholder himself, and the Company could not have a better Manager than Mr. James Bisset.

THE LANKA PLANTATIONS CO., LD., is one of the oldest connected with our planting industry and has always deserved well in the estimation of colonists. It suffered in the coffee-disease days; but we are glad to see how far prosperity has been renewed—though dividends still are small—and the very satisfactory prospect there is now before the shareholders. We congratulate Mr. Geo. Allen and his brother directors as well as the local Agents, Messrs. Murray, Robertson & Co. on this good result. The Lanka Company has still large interests in coffee (its crop for 1894-5 realizing nearly £7,000) and also in cacao (its cocoa selling for over £3,000) apart from tea. Gum seed was sold in Ceylon for £10 3s 6d; and "Leaf" (what "leaf"?) for £109 0s 6d. This must be tea leaf from an estate where there is no Factory?

THE CHINA TEA SEASON OF 1895—having now virtually closed, it may be well to give the total export figures. It will be observed there is a comparative decrease on 1894 to the United Kingdom of nearly 3½ million lb.; but to Odessa (Russia) an increase of nearly 4½ million lb. To North America the export of China is about the same, but from Japan there is an increase this year of over 4 million lb.:—

EXPORT OF TEA FROM CHINA TO GREAT BRITAIN.

	1895-96. lb.	1894-95. lb.
Canton and Macao	6,149,453	5,431,775
Amoy	330,015	601,040
Foochow	11,175,408	14,357,248
Shanghai and Hankow ..	17,335,211	17,509,220
	34,990,087	37,899,283

EXPORT OF TEA FROM CHINA TO ODESSA.

	1895-96. lb.	1894-95. lb.
Hankow and Shanghai ..	27,040,068	22,555,223

EXPORT OF TEA FROM CHINA TO UNITED STATES AND CANADA.

	1895-96. lb.	1894-95. lb.
Amoy	9,489,775	12,800,107
Foochow	6,066,651	4,626,555
Shanghai	24,093,600	21,908,814
	39,650,026	39,335,476

EXPORT OF TEA FROM JAPAN TO UNITED STATES AND CANADA.

	1895-96. lb.	1894-95. lb.
Yokohama	27,496,112	26,542,487
Kobe	16,807,958	13,666,790
	44,304,070	40,209,772

THE NEW DIMBULA COMPANY, LIMITED.

Report of Proceedings at Eleventh Ordinary General Meeting, held at No. 52, Gracechurch Street, London, on Wednesday, 23rd October, 1895. H. Brooks, Esq., in the Chair.

The Secretary having read the notice convening the meeting, and the minutes of the last meeting, held on October 24th, 1894.

The Chairman said :—I have now to move that the report, balance sheet and accounts as presented by the Directors be received and adopted I think you all have copies of the report and accounts which are in their usual form, and I hope are intelligible to the Shareholders. Your Directors have much pleasure in meeting you again with such a satisfactory report of the operations of the Company for the past year. The Statement of Accounts you will see shows that in spite of receding prices for tea during the past year, profits do not show any material falling-off from those earned in the previous twelve months ; a result which is due, to some extent, to the prevalence of a favourable rate of exchange, but largely, I may say, to the fact that expenses in Ceylon have been kept down to a very low level, and to an increased yield. That, I think, is evidence of the careful management by our Resident Manager in Ceylon. I do not know that there are any items in the account to which I should call your attention. You will notice from the closing of the present Accounts for tea-extension and machinery and building, that the outlay on these items has now all been written off, and that the cost of all the new tea acreage has been provided for out of the profits, as well as the building and the machinery. I may now, perhaps, gentlemen, be permitted to congratulate the holders of the B Shares upon their receiving all arrears of dividends upon this class of Shares, and the holders of the C Shares upon their now participating for the first time in the division of the profits of the Company. And as this in a way marks an epoch in the history of the Company, it may not be out of place here to recapitulate the results of the Company from its formation, and it is perhaps with some pardonable pride that your Board may point out that not only has the conversion of the estate from coffee to tea been fully carried out, but that we now have a factory and plant in the highest state of efficiency, and equal if not superior to any other establishment for tea making in the Island, and that we have paid the Debenture holders of the old coffee company interest upon their money at 8 per cent. up to the present time. The Company has paid out of profits over £32,000 on tea extension, buildings and machinery, and has paid to the shareholders during the same period, no less a sum than £64,000 in about ten years. And I think, I may say you have now a property worth very much more than the amount at which it stands in the books of the Company. With regard to the future, we are hopeful that we may continue our successful career, but we are not unmindful that the possibility exists that the low rate of exchange which has helped us so much in the past season now under review, may not always remain in a condition so helpful to the successful operations of this Company. If there is anything in these accounts upon which any proprietor wishes to have any further information, I shall be pleased to give it if it is in my power. I now beg to move that the Report, Balance-Sheet and Accounts, as presented by the Directors be received and adopted.

General Harris having seconded the motion; Mr. James Anderson asked what was the quantity of tea obtained from the estate, and what the cost per lb. free on board, and whether there was any intention of increasing the acreage in tea, and remarked that it appeared to him an unnecessary precaution to have a reserve fund.

General Harris having dissented from this view, the Chairman stated that 837,116 lb. Tea had been obtained, costing 3·26d per lb. free on board, and that the question of tea extension was under consideration. He also contended that it was desirable to have a reserve fund. The resolution was put to the meeting and carried unanimously.

The Chairman :—I have now to move the following resolution :—"That a dividend be declared on the A shares at the rate of 8 per cent. per annum ; that a dividend be declared on the B shares at the rate of 16 per cent., viz., 8 per cent. for year ending June 30th, 1894, 8 per cent. for year ending June 30th 1895 ; that a dividend be declared on the C shares at the rate of 6 per cent per annum ; and that an additional dividend of 2 per cent be declared on all shares; that the same be paid on October 24th, less the interim dividends on the A and B shares, paid in March last ; and that £3,000 be placed to a Reserve Fund.

Sir A.N. Birch, K.C.M.G., seconded the motion, which was carried unanimously.

The Chairman : The next business on the Agenda is to notify that there is a vacancy on the Board through one of the Directors retiring in rotation. Mr. W. S. Bennett is the Director who now retires, and I have very great pleasure in proposing that he be re-elected as a Director of the Company, and I think from the amount of good work he has done for the Company, you should be very pleased to support him.—Mr. W. Herbert Anderson seconded the re-election of Mr. Bennett. The resolution was carried unanimously.—Mr. Bennett :—I thank you very much, gentlemen. I have been connected with this Company since its earlier troubles began, and I am glad to see it has merged from them in such triumph, and I hope it will continue to prosper.

Mr. James Anderson :—I have much pleasure in proposing that Mr. George Sneath be re-elected Auditor for the ensuing year, and that his fee be 20 guineas. Mr. J. K. Morrison :—I have pleasure in seconding that resolution. The resolution was carried.

The Chairman :—Before separating, I should like to move that a vote of thanks be tendered to the Resident Manager in Ceylon. You will see from what I have said, how much we attribute our success to the way our affairs are managed in the island, and I think we can do no less than express our feeling of satisfaction at the way in which things are done. I have therefore much pleasure in moving that a vote of thanks be accorded to the Resident Manager and Staff in Ceylon.

Mr. Bennett ; I shall have the greatest pleasure in seconding that, knowing Mr. Dick Lauder and also his indefatigable work, and his knowledge of engineering and all other matters which help him in his work. Mr. C. J. Scott : May I say that I visited the estate last December, and I have very great pleasure in supporting that resolution. Everything was in perfect order, and the prospects of the Company look excellent. (Hear, hear.) The resolution was carried unanimously.

Mr. James Anderson moved a vote of thanks to the Chairman and Directors for the way in which they had conducted the affairs of the Company, not only during the past year, but during the whole history of the Company. General Harris seconded the motion which was carried unanimously. The Chairman acknowledged the vote of thanks, and the proceedings terminated.

POONAGALLA VALLEY CEYLON COMPANY, LIMITED.

Capital £50,000, in 5,000 shares of £10 each.

Dividends will be payable as from 1st January, 1896, according to the amount for the time being paid or credited as paid up on the shares.

The estates were inspected and valued by Mr. Alexander T. Rettie, the well-known Manager of the Spring Valley Estates, in June last, with a view to the sale to the Company, and the following figures are taken from his Report :—

Directors.—Sir George Augustus Pilkington, Southport, Chairman (the Vendor to the Company). Robert Colvill Bowie (Portmore Estate, Ceylon), Ravensby House, Carnoustie, N.B. George Gray Anderson (Lyall, Anderson & C.), 16 Philpot Lane, E.C.

Secretaries and Office.—Lyall Anderson & Co., 16 Philpot Lane, E. C.

Prospectus.—This Company has been formed to purchase from Sir George A. Pilkington the properties of Lunugalla, Udahena, Cabragalla, and Poonagala, situated in the Kandapolla, or Eastern division of the district of Haputale, Ceylon.

The estates consist approximately of 2,554 acres in all, viz :—

Lunugalla.—Altitude, 2,500 to 4,500 ft. above sea level—228 acres tea in full bearing ; 54 acres tea planted 1893 in coffee ; 28 acres tea planted 1894-95 in coffee ; 35 acres drained and roaded for planting ; 35 acres fuel trees ; 50 acres coffee ; 358 acres Patna forest, waste &c. Total 788 acres.

Udahena.—Altitude, 3,000 ft. to 5,000 ft. above sea level—140 acres tea in bearing; 30 acres tea and coffee: 45 acres tea planted in 1893; 18 acres tea planted in 1894 ; 10 acres coffee ; 80 acres cleared and drained for planting ; 5 acres fuel trees ; 325 acres ravines, Chena, Patna, Waste, &c. Total 653 acres.

Cabragalla.—Altitude, 3,000 to 4,500 ft. above sea level—100 acres tea in full bearing ; 30 acres tea planted in coffee 4 and 5 years old ; 20 acres tea planted in 1893 ; 18 acres tea planted in 1894 ; 30 acres coffee ; 10 acres Fuel Trees ; 17 acres Patna Ravines and Waste ; Total 225 acres.

Poonagalla.—Altitude, 2,800 to 4,000 ft. above sea level—116 acres tea over 3 years old; 35 acres tea over 2 years old ; 52 acres tea planted in 1891 ; 20 acres tea planted under coffee 1894 ; 80 acres coffee; 6 acres Liberian Coffee (all drained) ; 2 acres fuel planted 1894 ; 577 acres forest, patna, waste &c. Total 888 acres.

The estates were valued by Mr. Rettie at an aggregate of £27,050 sterling, and the price to the Company has been fixed at that figure. The Company will also pay the amount of any capital outlay on the estates by the Vendor between 20th June last, the date of the valuation, and the 1st of January, 1896. Mr. Rettie's Report and Valuation is open to inspection at the Office of the Company. The properties will be taken over as from 1st January, 1896.

Sir George A. Pilkington has agreed to accept payment as follows :—

£10,000 in fully-paid Shares ; 8,500 in 6 per cent Debentures ; 8,550 in Cash ; £27,050.

Factories.—Mr. Rettie reports that at Lunugalla the factory is a substantial building of three flats, 96 feet by 36 feet, with a 15-feet verandah on ground floor for machinery, which is in good order and sufficient for next two years ; and that at Poonagalla there is a very nice compact factory of 60 feet by 40 feet, a ground floor and two upper floors, and ample supply of water, and the machinery all new, in excellent order and sufficient for some time to come. There are no factories at Udahena and Cabragalla, the tea from the former being made at Lunugalla, and from the latter at Poonagalla.

Extension of Cultivation.—In Mr. Rettie's opinion, on Lunugalla of the 358 acres of Forest, Patna, &c., 225 acres might be made available for Tea and most of the remaining 133 acres would grow fuel. On Udahena about 150 acres of Chena Patna, &c., could be planted with Tea and much of the balance could grow fuel. On Poonagalla about 200 acres of the 577 forest wold probably grow Tea profitably and much of the remaining 377 acres would no doubt grow fuel.

Coffee.—There are 50 acres of excellent Coffee on Lunugalla in good heart, on Cabragalla 30 acres very fine, and on Poonagalla 40 acres in good heart.

THE VINE GROWING EXPERIMENT AT THE AGRICULTURAL COLLEGE.

With regard to the vine growing experiment at the Agricultural College, instituted by and carried out under the Supervision of Mr. Zanetti, Mr. Drieberg the Principal of the College is now in a position to report as to the first season of culture. As stated there are 800 plants, one or two years old, trained to a height of about 3½ feet. The plants are now beginning to show signs of "wintering" as they would naturally have done at this season had they been allowed to remain in Australian soil. Planted four months ago, the vines came out in blossom two months after being put into the ground and shortly afterwards fruit formed on the two year old plants. There were fifteen bunches in all and the grapes forming these though inferior in size and appearance to the grape of Europe or to the hot-house grape of Britain, have an excellent flavour, very different from that of the Ceylon variety. So far as it has gone Mr. Zanetti is satisfied with the experiment and with the appearance and growth of the vines. Little importance is attached to the crop which has been produced as it is supposed to be due to the fact that the vines, having been two months out of the ground when they came from Australia, matured it when they were planted at the Agricultural College. The vines have been pruned down after the continental metho d and Mr. Zanetti is hopeful that when they again shoot up there will be indications of an improved crop. It is expected that there will be another blossom on the vines before the end of the year. The heavy rains recently experienced, it is satisfactory to note, have done little damage to the plants, as a matter of fact they do not seem to have been effected in any way special precaution being taken in the matter of providing for the water running away.

SALE OF AN ESTATE.

Mr. T. C. Anderson has sold Kitulgalla estate, Kelani Valley, to Mr. J. B. Lindesay for £1,750 sterling cash. The property covers 172 acres—40 acres tea in full bearing, 40 acres heavy forest and 92 acres chena.

THE GREAT WESTERN TEA COMPANY OF CEYLON, LIMITED.

The half-yearly general meeting of the Company was held at 12-30 p.m. on Nov. 1st, at the office of Messrs. J. M. Robertson & Co. Mr. J. C. Dunbar presided, and the others present were:—Messrs. J. F. Headrick, D. R. Marshall, R. L. M. Brown, Thos. Mackie, Geo. Vanderspar, Henry Bois and W. Moir (Secretary).

The Secretary read the notice convening the meeting and the minutes of the last general meeting which were confirmed.

The Chairman then said that the meeting had been called merely for the purpose of declaring an *ad interim* dividend. The Report was satisfactory and the Directors were highly pleased at the state of things. The quantity of crop for the half-year was considerably in excess of that for the same period during the previous season. Having gone carefully through the accounts, the Directors thought they were safe in recommending an *ad interim* dividend of 8 per cent. for the half-year.

Mr. D. R. Marshall thereupon proposed and Mr. R. L. M. Brown seconded that an *ad interim* dividend of 8 per cent. be declared. —Carried *nem con.*

Mr. Vanderspar inquired how much the crop for the half-year was.

The Chairman said it was 189,640 lb.—54,000 lb. in excess of the quantity secured during the same period last year.

Mr. Vanderspar then inquired if the first or second half of the year was usually the better for crop.

The Chairman remarked that it was the second half of the year.

The business then concluded with a vote of thanks to the Chair.

OUR MONSOON AND "THE ELEVEN YEARS' CYCLE."

Our readers will remember certain interesting papers on the above subject written by Professor Archibald during his visit to Ceylon early in 1893, and some may recall his prophecy for the advent of the South-west monsoon of that year. It was not realized according to the date registered at the Master Attendant's Office; but Captain Donnan, like ourselves, would be free to admit that, in fixing an exact date for both the little and big monsoons, a certain amount of arbitrariness or guesswork must inevitably be applied in view of the means available at our Port for judging of the conditions. So much we readily grant to Professor Archibald who sends us from up-country another interesting letter on the subject. It is a pity notwithstanding all that is done through the Surveyor-General's and Public Works' Departments, that our Meteorological Returns should be so inferior evidently to those of India. In India, of course, there is a separate Meteorological Department, and a specially qualified head in Mr. Eliot, giving all his time and thought to the subject; and it is a pity we think, that in respect both of Meteorology and—if we may add—of a Geological Survey, Ceylon should not be identified with India, and worked as one. In respect of Meteorology, there can be no doubt that the observations and reports which Mr. Eliot would initiate in Ceylon, could not fail to have a very important bearing on the deductions which are regularly made from the Indian Meteorological Observations. We could not have a better Governor to approach on such a subject than Sir West Ridgeway in view of his special Indian experience, and we trust to see some improvement and assimilation in Meteorological werk attempted in Ceylon during his term of Government, as also a Geological Survey commenced if not completed.

"THE CEYLON HANDBOOK AND DIRECTORY FOR 1895-6."

(By an old Resident.)

I have to thank you Sir, for an early copy of *the* big "book"—as I see you call it in your editorial notice of its issue at last. This is a name often given, with a different meaning, to the Bible, and without irreverence we may call your Directory for 1895-6 the Ceylon Book of Books, or the Big Book of Ceylon. Lying before me is also a copy of your "Hand Book" for 1863. It is worth while to stay for a moment to compare the two. The book for 1863, while being also an 8 vo. is only one inch thick, including the covers, and weighs only 1¼ lb. with 460 pages. Your new Directory just issued for this year, has a thickness of about three and half inches, and weighs 5 lbs., with over 1,500 pages. Now, as it would trouble anyone wanting a scrap of blank paper, for a note, or memorandum, to find a spare clear square-inch between the two covers, it follows that every inch of the surfaces of nearly 1,600 pages is covered with printed matter of use and value. But to continue the comparison between the books of 1863 and of 1895. These years indicate a period of 32 years, so that, in order to bring your Big Book "up-to-date" it has grown, or increased in size and contents, nearly four-fold, and by over 1,000 pages, in that time; or at the rate of 30 pages every year, on an average. But some years have been more prolific of new matter than others, and notably has this been the case with this new volume, for it is by one inch thicker than that of last year, to go beyond the dimensions of which it was then thought almost impossible. It follows, therefore, that the present Directory contains over 200 more pages of matter than any of its ponderous predecessors. How such a little island-country can furnish material for so huge a Year-Book is a puzzle, until we sit down to a careful and patient study of its contents. Naturally, as we should suspect, it is pretty exhaustive of the useful information about everything Ceylonese from its INDUSTRIES past, present, and those possible in the future, to its LAWS, TRADE, INHABITANTS, MANNERS. and CUSTOMS. CLIMATES (and there are many) STATISTICS of all kinds, particulars of all PLACES, TOWNS, VILLAGES, DISTRICTS, PROVINCES. ROADS, RAILWAYS, RIVERS a CALENDAR, chokefull of useful information of many kinds; all useful Ordinances, full Military and Naval notes, and a thousand and one other details which only an exhaustive Index can show; and the Index of this Directory fills 32 pages of double columns.

The full and complete Directory contains the names of everybody who is anybody, and is brought up to the date of publication by nearly a dozen pages of "Errata and Addenda," necessitated by the nature of the case, for somebody is shifting his quarters, coming, going, or alas! dying every day of our lives. The details of each district, and of every estate in the island, are particularly valuable and complete, having been corrected up to the latest possible date, and I see that the old antiquated word "abandoned," opposite valuable properties not yet brought under suitable cultivation, is here for the first time itself abandoned in favor of the more appropriate and correct word "uncultivated." A year or two ago before the Japs had asserted themselves, I happened to be at the Mount Lavinia Hotel when a dozen of these Islanders called here as passengers *en route* to Europe. I noticed them well. They were in European clothes, and for the most part spoke English. One of their number sat pouring over good Mr. Link's copy of your big Directory for that year. Pretty dry reading, I thought, for tourists, till the gentleman jumped up, book in hand, searched out the manager, and declared he "must have one of these books," and offered to buy, and did buy and pay for that copy on the nail. Japanese, we have since learnt to know, are discriminative and appreciative, and good imitators, so that I should not be surprised to hear that your Directory has suggested one for Japan. It will take the Japs a good many years to get up such a book as this, but I suppose they will begin in a small way as you did over thirty years ago. It seems now, after nearly half-a-century, that it is scarcely possible to think of a single question to which a reference to the index will not direct you, amongst the subjects crowding these 1500 pages, to an answer. The man who does not possess a copy of this Directory is himself as a stranger in the land.

I must not forget the latest exceedingly valuable addition to this marvellous R16 worth of necessary knowledge, viz., the Map of Ceylon in a pocket in the cover. It was a happy as well as a liberal thought to present this along with the Book to subscribers; and I also see as frontispiece the presentment of our new Governor.

COFFEE IN THE STRAITS.—Considerable interest is being shewn in coffee planting in the Gopeng division, as the people are beginning to appreciate the value of the existing plantations around Gopeng and at the foreign settlement at Lentgvat.—*Kinta September Report.*

BORER IN TEA.

On Sept. 19.—Messrs. Macneill & Co. wrote to the Association enclosing copy of a letter received from Mr. H. A. Hole Manager of their Doodputlee Garden Cachar, regarding damage done to an indigenous bush by a borer. The enclosure was in the following terms:—

I am today sending you by parcel post the shoot of an indigenous bush killed by a borer. There are two grubs within the shoot; I shall much like to know what they are. I never before saw any boring insect that attacked tea. Here it is comparatively common, as you will perceive, attacking the strongest and healthiest shoots of indigenous bushes, causing the shoot to wither and eventually rot off just where the bore commences. The grubs live on the pith of the shoot. The borer does not commence from the ground. The shoot I enclose rotted across about 2 feet from the ground, the pith of the lower portion being intact. I think many cases that are put down to white-ants are really the work of this borer.

The above correspondence and the shoot were forwarded to Dr. Watt requesting that he would kindly favour the Association with his opinion. In replying if Dr. Watt says:—

I have the honour to acknowledge receipt of your No. 326 O dated 9th instant. on the subject of a Borer caterpillar in a sample of Assam indigenous tea sent to the Association by the Manager of a Tea Garden in Cachar. I regret to say that the worm in question had so shrivelled up or possibly been so attacked by ants on transit that it was unrecognizable, From the appearance of its operations I should however presume it to have been the Red Borer, Zeuzera Coffeæ, an insect that I have repeatedly found doing much harm in certain gardens. You will find a figure both of the caterpillar and moth in Mr. Cote's "Account of the Insects and Mites which Attack the Tea Plant," p. 8.

2. I would invite you to kindly ask the Manager to cut off a few more twigs containing the borer, and to place these in a wide-mouthed bottle with spirits of wine sufficient to at least half fill the bottle. In this way the insect can be conveyed to me in a state that will admit of its final determination.

3. I would also desire you to be so good as to ask that certain observations be recorded regarding the insect. We do not know (assuming that it is Zeuzera Coffeæ) how many generations of that insect there are during the year. This could be best ascertained by completely enclosing an affected bush with wire gauze and allowing the insect to have its way with that particular plant. The number of times moths emerge should be carefully recorded. Some writers say that the moths emerge from the cocoons in February, others that there are more than one generation, while other species of the same family of insects are known to live for two or three years in the larval stage before they produce cocoons and perfect insects.

4. It would obviously be unwise to recommend any treatment till we discover the full life history of the insect. During my tour through Assam I urged on the attention of planters the necessity of their co-operation. We are not likely to advance the question of how to cope with the pests of the tea-plant till we possess more trustworthy particulars than we at present have regarding each blight and pest. Were each planter to give even five minutes every alternate day or so to the study of one out of the many insect pests we very soon would possess the desired particulars. The borers would be best studied in the way I have indicated. A few of the insects that escape should be collected, killed as carefully as possible, so as not to rub off all the plumage by which alone they are recognised. The others left to couple and lay their eggs. Cocoons, caterpillars and if possible eggs as well as perfect insects are necessary for a final determination. The preserved moths should be placed in a small box along with camphor. The date of emergence should be recorded, and the experiment extended for, say, two years in order to see how many times a year moths are produced.

5. For most of the larger insect pests of the tea plant I believe as effectual a method as any to battle with them would be to train a few children to catch the moths in ordinary insect-collecting nets. I have seen as many as 8 or 10 maunds of the common brown caterpiller (Andraka trilochoides) gathered daily in one garden. A few weeks later thousands of the harmless looking moths were, however, allowed to flutter about all over the garden, and deposit thousands upon thousands of eggs. I do not say the planters should stop collecting the caterpillar; by no means, but if it pays them to do so why not complete the process by catching the moths as well. The first step toward any such wholesale warfare against the larger insect pests is, 1st, to know both the caterpillar and the moth: 2nd, to know the months of the year when these should be looked for. In the case of borers it is obviously the more rational course to catch the moths, since the collection of the caterpillar very often means the destruction of the bush. The presence of the borer may at once be detected by the saw-dust like powder seen escaping from holes on the stem or branches, or accumulated around the base of the stem, and by the leaves of the tree all turning brown simultaneously and withering up along one branch or set of branches that spring from a distinct portion of the bush. These should be instantly cut off, and burned, as they can do no good, and may become the nursery for hundreds more of the same enemy

TEA BLIGHTS.

We (*Indian Planters' Gazette*) have to acknowledge receipt of the following correspondence which will be of interest to our readers:—

From—Messrs. Macneill & Co. Calcutta, Sept. 7.

In a letter which we have received from the Manager of our Kalline Garden in Cachar he writes us as follows:—

"In *Englishman* of 28th August a letter from Dr. Watt, read at Assam Branch of Tea Association, contains very valuable information under the heading of 'An Enemy of Pure Jhat Teas,' and solves a matter that has puzzled me for two years. Part of our very best tea has had the appearance, he mentions it had a close resemblance to red spider but you could not find the red-spider on the leaves as on hybrid. I am fairly sure it is the parasitic mite he writes of. These bushes have to a large extent recovered, but I should say, 10 per cent of them have given little or no tea for 2 years. I would feel much obliged if you could get me any further details or particulars of Dr. Watt's experiments or discoveries, and also if, when on this subject, you could get me a pamphlet or leaflet of his on the subject of introducing nitrogenous microbes into our soils by means of leguminous plants (a late German discovery). Mr. J. S. Hulbert, of the Assam Company, had been in communication with him about it."

We shall be much obliged if you can put us in the way of getting from Dr. Watt the further information which our Manager asks for.

Following upon this communication the Secretary of the Indian Tea Association communicated with Dr. Watt, Reporter on Economic Products to the Government of India.

Dr. Watt replied as follows:—

In reply to your No. 310—O., dated 10th inst., by which you forward to me an extract from a letter received by you from Messrs. Macneill & Co. on the subject of a blight observed at Kalline in Kachar, I have the honour to say that the blight in question is, doubtless, the new disease to which I have drawn attention.

The report on my explorations in Assam (at least in a preliminary form) I trust may appear very shortly, and will afford full particulars of the kind desired. In that report I am to recommend that the bushes should be syringed in March and April with either a decoction of Adhatoda Visica or kerosine emulsion. From my experiments I believe the simple insecticide we possess, in the wild plant Adhatoda, will very possibly be found completely

effectual. It is certainly killed the mite when applied to it under the microscope and was effectual also in the few practical experiments I was able to conduct during my rapid tour through Assam. But I am of opinion that unless applied with determination during the early stages of blights no insecticide is ever likely to be found a practicable remedy for any of the more serious maladies of the tea plant. Once they got fairly distributed over an area, say of 500 acres (which I calculate might possess 1,000,000 bushes), it seems to me that springing with insecticides is carried beyond the field of practicable operations.

Your further enquiry in which you ask to be supplied with a copy of my pamphlet on the Assimilation of Nitrogen through the Agency of the Root Tubercles in certain Leguminous Plants, I have much pleasure in enclosing two copies. I would add that while in Assam I made a discovery that I think of no small importance. The chemistry of most tea soils is admittedly deficient in nitrogen. You are aware that some years ago a hotly-contested controversy was conducted on the value of *Sa* (Albizzia stipulata) trees being grown in tea gardens. The Hon'ble Mr. J. Buckingham was one of the very first advocates of this recommendation I found that tea gardens over which *Sa* trees had been planted suffered far less from blights, and from the mite alluded to above more particularly, than gardens where *Sa* trees were not grown.

[The remainder of Dr. Watt's reply we published in our issue of 16th inst. under the heading of "Tea Blights and Leguminous Plants."—ED. *T.A.*]

A NEW CURE FOR SNAKE-BITE.

To allay, and cure, the intolerable pain following stings by scorpions, centipedes, hornets and their kind, which so often seek to share with us the shelter and comforts of our houses and couches in India, we have seen it stated that "*phenyle*" applied to the wounds has no equal as a remedy, and never fails. Be that as it may. we have now to consider a kindred subject of very much the greater importance as death after short agony is worse than pain however acute. We know from the statistics that a certain number of lives are lost every year from snake-bites; and although generally a marvellous immunity from such accidents is enjoyed by Europeans, still, so long as we live in a tropical country we are all liable to fall victims to lurking reptiles, while for the hospitals the subject is of vital importance. The world scarcely yet knows how tremendous is the debt of gratitude it owes to the great Frenchman, Dr. Pasteur, who has just passed away. He is even said to have 'put Lister on the path of his Antiseptic spray in Surgery'; and in France he saved the silk industry by curing the diseases of silkworms; he also cheapened the manufacture of beer by his pure yeast; he cured "Anthrax" in cattle, and following up this last discovery he was led to that still more important study the prevention and cure of hydrophobia. He saved hundreds of lives, and his system is now being followed all over the world. But these successes by no means exhaust the benefits conferred on mankind by this truly great man. Though he does not appear to have worked at the subject himself, it was he who again pointed the way, and it was at his institute that Calmette has conducted his researches for a "rational cure for snake-bite."

The principle is Pasteur's "immunised serum" possessing antitoxic powers. Pasteur's discoveries were directed against bacteria and bacterial infections, whereas the labors of Ehrlich, Behring, Kitasato, Calmette and Fraser have been to extend the same principal of serum-immunisation to other, *i.e.* non-bacterial, poisons. Not to weary the reader by following too closely the technical account of these labours as we read of them in "*Nature*," we may quote, first, as follows:—"It had been demonstrated by several observers that, by means of oft-repeated injections of small sub-lethal doses of snake poison (rattlesnake, cobra, or viper venom), the resistance of an animal against the poison may gradually be increased considerably, it may be rendered 'giftfest' to borrow a German expression. In fact, all the methods used for inducing a tolerance against tetanus poison can be shown to work in the case of cobra poison." The next step was, that Calmette showed that, "on mixing cobra venom with small quantities of serum obtained from an immunised rabbit, the deadly effect of the venom disappears, a fact at once confirmed by independent observations by Phisalix and Bertrand." Lastly, we read that "recently these French observations have received entire confirmation in their leading points by Prof. Fraser of Edinburgh." We, therefore, see that we are within a measurable distance of having a reliable cure for snake-bite at last. Of course it still remains to be perfected; but soon every hospital and every doctor will have a ready means of saving the lives of persons bitten by snakes, as well, it would seem of immunizing anyone who may be willing from all danger from a chance bite.

DRUG REPORT.

(From *Chemist and Druggist.*)

London, Cctober 31.

ANNATTO—A few lots of fair seed from Madras realised 4½d per lb

CAFFEINE—One of the manufacturers asks 19s per lb. for December delivery; the second one would probably accept 18s for the same position.

KOLA—There has been a good demand privately, sound but rather dull West African kolas having been sold at 8½d per lb. At auction today there was a good demand, fine qualities being held for very high rates. Other kinds were slightly dearer. Ten packages, out of the 41 offered, sold as follows:—West Indian, dull to good, but mouldy 6d to 9,d; good 11½d to 12d per lb.

ESSENTIAL OILS—Lemongrass and Citronella oils unchanged. Cinnamon oil at 1s per oz.

QUININE—Few Transactions are reported this week. There would probably be buyers of second-hand German bulk at 1s 1¼d, but no sellers can be found at that figure. Perhaps 1s 1⅜d might be accepted. The parcel of Italian (Fabbrica Lombarda) quinine to which we referred last week, had been lying in a warehouse for many years, and was out of condition. The price of 1s 1d per oz. obtained for this lot is therefore not a fair criterion to its general value. At auction today 6,000 oz. Brunswick quinine (landed weights), 1888 import, sold at 1s 1d per oz.

VANILLA.—At today's auctions the fairly heavy supply of 202 packages, weighing in the aggregate about 2,900 lb., was offered for sale. Competition was exceedingly brisk, and the prices realised showed an irregular but all-round advance upon the last auction rates. Practically the entire supply was sold at the following rates:—Mauritius and Seychelles: fine, 7 to 8½ inches, 28s 6d; crystallised, 6 to 7½ inches, 27s to 28s 6d; medium to good fresh chocolate, 6½ to 7½ inches, 22s 6d to 27s; brownish to fair, 4 to 5 inches, 17s to 20s; fair crystallised, 4½ to 5 inches, 21s to 22s 6d; ditto, 5 to 6½ inches, 25s to 26s; common reddish, 12s to 17s per lb. Dull foxy Ceylon beans realised 10s to 10s 6d per lb.: ditto Java, 4½ to 6½ inches, 8s 3d to 9s 3d per lb.

TEA CULTURE AND BLIGHT.—We call attention to the discovery of Dr. Watt given elsewhere in favour of the planting of *Albizzia stipulata* trees amongst tea, although the shade is not considered too favourable. As a substitute Dr. Watt recommends to the Assam tea planters the sowing of a crop of pulse and the digging in of the same; but the conditions in the Ceylon tea districts do not favour such an experiment, unless over a limited area.

ROEBERRY TEA COMPANY OF CEYLON, LIMITED.

Incorporation of this Company with a capital of R500,000 divided into 500 shares of R100-00 each has been applied for by Messrs. F. J. and R. F. de Saram. The Company is purchasing we understand the two estates Roeberry and Dehegalle both in Madulseema. A contemporary states:—

The former property consists of 633 acres, 300 acres of which are planted in tea, and 20 acres with grevilleas; and the rest is forest, chena, and patana. The other estate is 400 acres in extent, 242 acres being in tea; 58 acres coffee; 40 available jungle; and 60 scrub and jungle. The estates are being sold by the trustees of the estate of the late Mr. George Alston and the Blackwood Coffee Company respectively for £8,500 and £5,200. This is equivalent to about R237,000; and the cost of the factory now being erected, viz., R35,000, is to be paid by the Company. Three thousand R100 shares are to form the present issue; and the provisional directors are Messrs. Geo. Alston, W. H. Figg, and Percy Bois.

"FERGUSON'S CEYLON HANDBOOK AND DIRECTORY 1895-96."

(By an "Official.")

A new edition is before us literally bulging with information, and though not overflowing, very full indeed. It is a compendium of information—the experience of years of unwearied industry, of dauntless labour, of unselfish love and study of the Editor's tropical home—not the scourings of a bird of passage. Mr. Ferguson has given Ceylon more than any European has ever taken or can ever take away from it. No Dependency of the Queen has ever been served as he has served it, and may his shadow never grow less. The chapter on the rise and progress of the planting enterprise has been written down to the present year. As regards plantation coffee, it is satisfactory to find that the estimate for 1895 is 57,000 cwt. as against an export of 29,629 cwt. in 1894; and as regards native coffee an export estimate for 1895 of 4,000 cwt., as against an export of only 1,568 cwt. in 1894. These are encouraging indications that the decadence of the coffee plant has been arrested and that a slow but steady increase of the output of coffee may fairly be looked forward to. At present we have 305,000 acres of tea under cultivation. The export of tea has risen from 23 lb. in 1873, value R58, to 85,376,322 lb., value R16,103,214 in 1894. The imports of tea in 1873 were 69,494 lb., and in 1894, 242 lb. In 1878 10 cwt. of cocoa were exported; the estimated export for 1895 is 28,000 cwt. The export of cinnamon in 1893 amounted to 1,160,754 lb., value R580,370. The estimated export for 1894 is 2,784,754 lb., valne R1,113,902. The area of land under coconut cultivation is 854,221 acres yielding 1,436,219,635 nuts at an average of 1,680 nuts per acre. The approximate estimate of area cultivated with the coconut palm in the world is 2,780,000 acres. The cultivation is also being extended in Northern Australia with success. To what extent the ever-increasing cultivation of coconut will in the future affect the question of price, can at the present time be only a matter of mere speculation.

It is impossible for want of space to touch upon the exhaustive treatment of all our products—cardamoms, cocoa, palms, cinchona, rubber, &c. One can only peruse with ever-increasing interest and wonder the various exhaustive articles on these subjects. The total area of land cultivated in Ceylon is estimated at 3,387,000 acres, with a probable eventual extension to 4,860,000 acres. The valuation of agricultural property in Ceylon is estimated at £40,510,500. I have thus very lightly indeed touched on the first part of the Directory. Part ii is entitled "Calendar and Useful Information." The useful information is very comprehensive and minute—abbreviations used in connection with commerce—common chemical terms and their scientific equivalents—foreign patents, notes on boilers, table of constant multipliers for finding weight of metals, a most exhaustive chronological table of events in Ceylon, a resume of the principal Ordinances, &c., &c., &c. The comparative statement of revenue and expenditure in 1892 and 1893 (and further on, 1894) is most interesting, as also the chapter on Ceylon Railways. There is a very full and interesting chapter on the Colombo Harbour Works. The Directories are very full, as also the Estate Directories. But I must stop. It is utterly impossible to convey any fair conception or any conception at all of the vast and varied amount of most useful information this "Handbook and Directory" contains. At the end of the book there is a pocket and in it we have an excellent map of the island. So that between the boards we have the island and all it contains. The labour involved in gathering and arranging the information must have been stupendous. The result is worthy of the builder and worthy of the subject. If the Government Record Room, and the Kachcheri Record Rooms in the island, were burnt to ashes tomorrow, "FERGUSON'S CEYLON HANDBOOK AND DIRECTORY" would supply all that they contained and a trifle more!

THE CHINESE TEA TRADE AND RUSSIA.

The following is an important extract from the letter of the St. Petersburg Correspondent of *The Daily Telegraph*:—

At a sitting of the Siberian Railway Committee, presided over by the Heir-Apparent, now the reigning Czar, on Oct. 31, 1893, it was resolved that the Government be urgently requested to take energetic measures to induce the Chinese authorities to allow the Russian railway to run through Chinese territory in two directions, viz., from the Transbaikal to the Gulf of Liaotong on the one hand, and through Mongolia to the Central Provinces of China on the other. The reasons alleged were reasonable enough —from a Russian point of view; viz., the necessity of winning the Chinese markets, and in this way of paying the expenses of the railway. The memorandum on this commercial aspect of the case is instructive. It set forth that the chief exports from China are costly—viz., silk and tea, amounting to about 68 per cent. of all exports from the Celestial Kingdom: that about two thirds of these pass through English hands, and that over and above, England is ruining the tea trade * by her own plantations in Ceylon and India; that China, left to her own resources, is powerless to break down this competition; but that Russia, with the tea trade in her hands, could enable China to hold her own. The chief imports also could be supplied by Russia with advantage to both countries, viz., cotton &c., amounting to 41, and metal manufactures and woollen wares amounting to 10 per cent of all China's imports.

Unless this be done, it was urged, the Siberian railway will prove ruinous to the country. The report wound up by affirming that in all that part of north-eastern Asia, the most important district for Russia, from an economical and strategical point of view, would be the contiguous territory of Manchuria, comprising the basin of the Sungaree, with the cities of Sansin, Ningoota, Tsitsikar, and Girin, the actual population of which is about twelve times that of all Ussuria. This territory must be brought under the control of Russia.

And this is precisely the land through which it has just been reported Russia is authorised to construct two lines: to be called the Nertshinsk-Tsitsihar-Vladivostok Railway and the Tsitsihar Port Arthur Railway respectively, besides which she has received the right of anchorage in Port Arthur.

The plan existed, as I have shown, at a time when China and Russia stood face to face as irreconcilable enemies. That it will be realised now that they have become fast friends cannot for a moment be

* From 1886 to 1890 the export of tea from China fell from 90 to 67 million pounds.

doubted. The news may be premature. That it is absolutely false, no person acquainted with Russia's style of policy in the Far East can for a moment believe. Most of the reasons are obvious.

THE FUTURE SUPPLY OF INDIA RUBBER.

An English View of the Situation. *

Some twenty years ago sinister rumors as to the depletion of the rubber forests of South America caused a new departure in economic botany, namely, the systematic planting of rubber trees, and the results may be considered satisfactory as far as the possibilities are concerned, although the garden product, as we may term it, has not yet entered into serious competition with that from untended nature. The question now arises as to whether all the time and trouble has been expended needlessly or not. From what has appeared recently in the American technical press, this would appear to be the case, and it seems of some interest to briefly recapitulate those criticisms on what is almost entirely an English enterprise. Attention is drawn to the fact that vast forests of rubber trees exists untapped, and that any fear of curtailment of supply is illusory. This statement is supported by the fact that the market price of rubber remains practically stationary, while the demand has largely increased of recent years. A critic remarks that there is no good in doing what nature has already done so well for us; and another practical man, when asked why he did not support the rubber plantations, made answer by the query, "Why do I not go in for the cultivation of coal?" These and similar remarks go to show that in America there is no fear as to the supply running out, and that, therefore, any precautionary measures which prudence might dictate are unnecessary and uncalled for. The American business man cannot see any pressing need for the movement under consideration, and he is unwilling to embark his capital in an affair the benefits of which, to him at any rate, are so problematical. With regard to this point of unlimited supply, it may be noted that recent travellers in the upper parts of Brazil report that there is a large unworked area of rubber forests in the watershed of the Orinoco, and even where the forests are worked it is only in rare instances that more than the borders of the stream have been tapped, no trouble being taken to get spoil from the higher regions. Further than this there is a constant succession of trees arising from seeds. Count de Berthier has expressed the opinion that the Venezuelan forests could be made to yield 1,000 tons of the best rubber per annum if carefully worked, and he is supported in his optimistic tone by what the Baron de Marajó has written in a recent number of the New York India Rubber World. In Africa, although the supply is abundant, the want of navigable rivers has acted prejudicially against the due expansion of the trade, as under the conditions of porterage at present obtaining in many localities the natives find it unprofitable to carry rubber any distance to the coast when the item of paying tribute to the various tribes encountered *en route* has to figure in the profit and loss account. While on this matter of Africa's addition to our supply, we should like to take the opportunity of referring to the statement of M. Chapel that if the African rubbers were collected and prepared for market by the more enlightened methods in vogue in South America, the resulting product would be equal to the best Pará rubber. We confess to a mild feeling of surprise at this statement, and consider it a bold assertion which is not supported by the facts of the case, though as it must be remembered that some kinds of African rubber are much superior to others, the author quoted may have had in his mind the best of the African sorts. As regards the bulk of the rubber, that from the *Landolphias*, or the species of *Ficus* found on the west coast, we think the day is very far distant which will see them improved to the standard of Pará rubber, though we certainly do not doubt that some amount of improvement is possible, and indeed, to our own knowledge, this has been effected of recent years in the case of the Lagos rubber, which, though at first practically worthless, now fetches a fair price in the market. However, we are rather wandering away from the lines of this article, and to return to the critics of the rubber plantations, it may be noted that they prognosticate great difficulty in obtaining labor if the plantations are carried out on anything like a large scale. The Indian, it is asserted, will not change the whole course of their lives and submit to the entire revolution of their methods of work, while it has been amply demonstrated that Europeans or Asiatics are incapable of sustained work in the climate. Other objections have been urged, but in face of the chief one, viz., unlimited supply, there seems but little use drawing attention to them. The case then seems a tolerably clear one for those who argue that rubber plantations are not warranted by the facts of the case. In passing judgment, however, on those who, in the light of recent discoveries, may seem to have acted somewhat precipitately, and without the exercise of due foresight, we should, of course, bear in mind that the common facts of today were not the common facts of 10 or 20 years ago. The discovery of these rubber forests is of recent date, and it cannot, therefore, be pointed at as an overloked factor in the original consideration of the matter. It will be remembered by those interested that the representations made to our Kew authorities as to the depletion of the rubber forests, were couched in distinctly alarmist language, and therefore they quite merited the measures taken by the India Office. Of course it was possible for our government to have undertaken such explorations as have recently been made by private individuals, and this would probably have resulted in the alarmist rumors being somewhat discounted, as we may presume that the forests of today existed in much the same condition 20 or 30 years ago. However, it is easy to be wise after the event, and we shall certainly not be found in the ranks of those who seek to throw ridicule on the whole movement, because, whether the expense and trouble which our Kew authorities have been put to seem warranted or not at the present time, it has certainly been shown that rubber trees can be successfully acclimatized and grown in India and other districts far remote from their original habitat, and occasion may yet arise when the information thus gained may prove of much value to the India-rubber industry.

* From London *Engineering*.

COMMENT BY AN AMERICAN IMPORTER.

A gentleman thoroughly familiar with the conditions of trade and industry in Central and South America entertained somewhat different views from the above. "While," said he, "it is true that not much capital, American or foreign is invested in rubber plantations, the question is certainly in the air, and before long the vague notions and ideas on the subject will assume practical shape. The rubber countries are poor and naturally anxious to attract capital from outside to develop their industries and resources. On the other hand, it is beginning to be felt that some measures have to be taken to insure the future supply of the ever-increasing demand for rubber. As population grows, and as new applications or extensions of old applications of rubber in industry, are made, the demand for rubber increases, and it is a short-sighted policy to depend on existing rubber forests, which surely cannot last forever and access to which must become more and more difficult and expensive. Not only will rubber plantations be needed, but there will be more profit in them than in going to the inaccessible forests for the supply. The business world is not entirely ripe for it, but the subject is in the air, and you may expect to see the starting of a great many enterprises in that direction before many years go by. It is, however, to American capital that we have to look for this. Foreign capital will not go into anything the price of which is controlled by this country. We consume two-thirds of the rubber product of the world, and hence control prices. In twenty years our consumption has risen from less

than ten millions to not far from forty millions. The rubber countries look to us for capital. The natives in South and Central America have already begun the planting of rubber trees, and a traveler will meet here and there plantations of considerable importance. But American capital will do the real work when the time is ripe. There is, however, one serious drawback,—the lack of labor. There is no civilized population in the rubber districts, and the Indians cannot be depended on for regular, systematic, and continuous application. They are not accustomed to order and discipline, and they will work in their own way, getting drunk or loafing whenever it suits them."—*India Rubber World.*

VARIOUS PLANTING NOTES.

WOOD ASHES, fresh and unbleached, are of great value as a manure for fruit trees generally and also for strawberries, but the bare advice often given that they be "stored for use" should be accompanied by instructions regarding the proper method of storing. If wood ashes are once wetted they will have lost much of their manurial value; therefore they should be stored as soon as made. They should be kept quite dry at all times; but better still would be the adoption of a system of applying them to the soil while fresh.—*Indian Agriculturist.*

THE NEW DIMBULA CO., LD.—We attract attention to the proceedings at the annual meeting of this Company in London as given in another column. They reveal a specially satisfactory state of affairs and it is no wonder though the shares in this Company are strongly held in view of the dividends paid, and the fact that 837,116 lb. of tea last season were placed on board ship at the very low rate of 3·26d per lb. Altogether, the vote of thanks to the Ceylon Manager was exceptionally well deserved.

THE "AGRICULTURAL GAZETTE" of New South Wales, Vol. VI., part 9, September 1895.—Contents:—Notes of a Trip to the North Central Coast Forests of New South Wales, J. H. Maiden; The Cultivation of Lucerne (*Medicago sativa.*) J. L. Thompson; Broom Corn or Broom Millet (*Sorghum vulgare, Pers.*) G. Valder; Comparative Test of Sorghums, G. Valder; Sugar-cane at the Experimental Farm, Wollongbar, Richmond River, G. M. McKeown; The Honey Bee—On the Relationship of all Bee-races, with suggestions for their Improvement, R. Helms; Bee-keeping—The Inmates and Economy of the Hive—The Queen Bee (*continued*) Albert Gale; Practical Vegetable and Flower Growing, Directions for the month of October; Orchard Notes for Oct., General Notes; Growing Flax; Table showing the Districts in which the under mentioned Timbers are obtainable; Wild Oats; Yorkshire Fog, Agricultural Societies' Shows. 1895-6.

COFFEE IN GERMAN EAST AFRICA.—The *Deutsches Kolonialblatt* says:—

The firm of A. Zuntsel, Wve., has given the following report respecting a sample of coffee sent by the station Kilossa in German East Africa:—"The coffee resembles the increasingly scarcer fine Ceylon coffee. The bean is not yet fully developed; the roasted beans also appear somewhat shriveled; but probably the product could be brought to develop well by means of practical cultivation and rational treatment. The flavour of the roasted beans is good and resembles that of Ceylon coffee. The price of the raw coffee I should estimate at 85 to 90 pf. per ½ kilo, without duties. The price of good Ceylon coffee, or of its superseder, namely 'West Indian cured,' varies from 90 to 105 pf. per ½ kilo without duties. If I place the price of the sample sent lower, it is because it is still somewhat light and not so full of flavour as the kinds resembling it in the market." From the above it appears however that a regular cultivation of the coffee referred to would in process of time pay, and should thus well be recommended.

LEEDS AND ITS TEA TRADE.—The "gift" system applied to the sale of tea is popular, we should imagine, in Yorkshire. In Leeds the generosity of the tea retailers knows no bounds. Furniture, upholstery, in fact almost anything from a child's cot to a bootjack is included in the items given away with a pound or more of tea. Indeed, a large purchaser of tea who was about to start house furnishing might stock himself with tea and fittings upon reasonable terms, and upholster his residence from the kitchen to the roof, including the crockery and the carpets.—*H. & C. Mail.*

VICTORIA REGIA PLANTS.—Read the following letter from Mr. W. Nock, Acting Director, Royal Botanic Gardens, Peradeniya, dated 3rd September, 1895:—

"You will be sorry to learn that all the plants of the *Victoria Regia*, that you were good enough to send, have died. On the other hand you will be pleased to learn that 11 of the seeds have germinated and are doing well and I hope in a few weeks time they will be large enough to plant out. The only thing that has troubled them yet is a water slug which feeds on the small tender leaves. I am having these carefully hand picked and I trust all will now go well. I had much pleasure in despatching by post to your address on 22nd ultimo, 36 packets of Palm seeds which I trust have reached you safely and that they will prove acceptable. I very much regret that, at present, we have but a very few of the plants named in your list of desiderata, but I have instructed my assistant to propagate as soon as possible as many plants of those you ask for and they will be forwarded as soon as they are ready."—*Agri-Horticultural Society, Madras.*

THE LABOUR QUESTION—like the poor—is always with us and there are signs as the letter of "A.F.S." shows that scarcity of supply and pressing needs are likely to lead to multiplication of sharp practices. We fear the Government cannot take action in the way pointed out, more especially in respect of private land; but certainly the matter should be brought under the notice of the Planters' Association.—A much larger question is opened up after a very interesting fashion by our correspondent "Egomet," He begins by having a hit at the objectors to indentured labour, and then proceeds to point out to those whose averseness to this system appears to be based upon the regulations that obtain in Assam, that an organization yielding very desirable results, which he enumerates, exists on the Diamond Fields of South Africa and is very well worthy the consideration of our planters. In the concluding part of his letter he emphasizes the necessity for reform whether initiated by the Government or by the planters. On this point our opinion is that the matter is not ripe for legislation, at all events at present. "Egomet's" proposal is nothing less than a revolution in the present system of dealing with the planting labour force in Ceylon. The sketch given of what has been done on the Diamond Fields is most enticing, more especially the substitution of arbitration Boards or officials for the Law Courts, the regulation of the supply of liquor, and the guarantee of a regular supply of docile labour. We fear in the case of Ceylon that the formation and working of a similar organization so as to cover the whole of our planting districts would be expensive. But the members of the Planters' Association would do well to invite "Egomet" to lay the scheme before them in full detail.—In the minutes of the Udapussellawa P. A. we notice that a very sensible resolution has been passed recommending co-operation between the planters and the Chamber of Commerce as to making a suitable alteration with regard to paying coolies.

Correspondence.

To the Editor.

PROFESSOR ARCHIBALD ON THE MONSOONS AND THE "ELEVEN YEARS' CYCLE."

Nov. 19.

SIR,—As I happen to be again passing through this earthly Paradise and may not have another opportunity of following up the question *in situ* I shall be glad if you will allow me a little space to refer to the "eleven year" cycle of the dates of arrival of the big monssoon at Colombo which I placed before your readers in 1893 and to advert to its apparent and exceptional failure during 1893, 4, and 5. From the averages for the cycle from the past dates since 1854 given in the list furnished by the Master Attendant, the arrival of the big monsoon ought to have been 2, 10 and 4 days early in 1893, 1894 and 1895 respectively, whereas it was 19, 16 and 30 days late—differences not only exceptionally large, but entirely opposite to those which occurred in the corresponding individual nine years of three preceding cycles covering a period of thirty years.

Of course the popular verdict will be that the theory has failed, and so I frankly admit that it has in these three years; but it would certainly be hasty to infer either that its existence is mythical or that it may not turn out to have a practical as well as scientific value in the future and I venture to put forward my reasons in support of this claim.

In the first place it was discovered by the remarkable unison that was found to be displayed by the arrival dates at Colombo and the yearly rainfall anomalies of the Carnatic, the cases in which early dates at Colombo and heavy rainfalls in the Carnatic and late arrivals and light rainfalls agreed, being no less than eighteen out of 22 with only one distinctly negative case. Such a parallelism itself argues the presence of law and even granting that three cases in which the parallelism fails, have now to be added, they only make the ratio of favourable to unfavourable eighteen to four instead of eighteen to one. Moreover, since the concurrent fluctuation in the Carnatic rainfall and the sunspots has been maintained all through, notably in the present year as referred to in the *Pioneer* of Nov. 5th, the exceptional feature seems to lie entirely with the Ceylon dates of arrival.

Now as the Master Attendant may be assumed to have only a small personal equation, we must evidently look either to some local pecularity or to some general cause which without sensibly altering the supply of rain to the Carnatic or Ceylon has exercised some peculiar effect upon the conventional date of the arrival of the big monsoon at Colombo.

It is certainly a fact which has been officially admitted by Mr. Eliot, the head of the Meteorological Service of India, with whom I have been working during the past two years, that ever since the beginning of 1893, some extraordinary and abnormal set of conditions has prevailed, not only over India, but over the entire Indian ocean, as far as data are available. The monsoons of 1893 and 1894 were abnormal in respect both of quantity and distribution, and it was only the other day as he was leaving for a tour of inspection in Persia that Mr. Eliot asked me to investigate the possibility of these conditions being connected in some way with an unusual quantity of floating ice in the Southern Ocean, of whose presence an Orient steamer had a vivid proof the other day by receiving 70 tons of it on board without any manifest after colliding with a berg. It will surely be admitted that the presence of such a widespread abnormality as that which caused the monsoon of 1893 to stand out in contrast with all its predecessors, as *the wettest ever known*, and that of 1894 as the *second wettest in India* may be allowed to upset temporarily a law which depends on a regularly recurring and small variation of sun-heat As soon as these abnormal conditions subside, the normal laws may be expected to act, and the cyclical law which I firmly believe exists, will resume its operations.

Before concluding, I should like to point out that the rainfall of Ceylon judging from Colombo unlike that of the Carnatic does not seem to be directly dependent upon the early or late advent of the S.-W. monsoon as estimated by the Port officer.

For example in 1893 when it was 19 days late according to his method, the rainfall of May at Colombo was no less than 20·39 inches or nearly double its average (11·34) for this month while the total for the year was 2 inches above the average. Some people would be inclined to fancy such a rainfall with a S.-W wind would of itself constitute a monsoon, but I suppose the Port officer has his own opinion about what constitutes a burst. Again in 1872 when the burst was assumed to occur on May 1st which was 18 days earlier than usual the rainfall of May was 1 inch below the normal, and the total for the year 25 inches below the mean for 25 years, and nearly the lowest on record.

It would almost seem therefore from these instances that an early arrival of the big monsoon betokened a scanty rainfall and *vice versa.* I have therefore examined this point with the following results.

First I have taken exceptional years and then all cases of early and late arrivals. The results are given in a tabular form below:—

Table I.—Extreme monthly falls, arrival of big monsoon.

		inches	
Wettest May	1888	28·78	one day early*
Driest May	1882	2·62	normal date.
Wettest November	1870	36·23	9 days early.
Driest November	1872	2·82	18 days early.

Table II.—Big monsoon exceptional arrivals.

	years	average date	rainfall anomaly May	Oct.	year
(1) Early	1872, 1874, 1883, 1887	May 6th (13 days early)	in. 0	in. —4	in. —8
(2) Late	1876, 1885, 1893, 1894	June 5th (17 days late)	in. +2	in. +1	in. —3

	Total annual fall anomaly in.
All early years (11)	+0·8
All late years (12)	+2·0

The balance is thus in favour of late years though the amount is not enough to be practically important. The general result appears to be that so far as Colombo is concerned the monthly and annual falls are not directly dependent on the early or late arrival of the south-west monsoon, but is due to certain secondary and probably local influences which mask any regular periodicity; but that in general the rainfall at Colombo both monthly and annual is greatest in those years when the arrival of the monsoon according to the port officer's definition is latest. An examination of the rainfalls at other places in the island is required before any deductions can be drawn for districts other than the neighbourhood of Colombo. I hope some one may be tempted to undertake it and send the results to the Indian Meteorological Office, which is studying the general conditions that affect the monsoons of tho Indian ocean.—I am sir, yours faithfully,

DOUGLAS ARCHIBALD,

Fellow of the Royal Meteorological Society of London.

* The average date for the arrival of the big monsoon is taken to be 19th May.

BRIQUETTES (BRICKS) OF COFFEE HUSK FOR FIRING PURPOSES.

November 20.

DEAR SIR,—In the *Observer* of the 19th inst. I note that at the last meeting of the Malang Planters' Association it was resolved to offer a prize for the discovery of a cheap binding substance for the preparation of briquettes of coffee husk, etc., etc., and as I think I could throw some light on the subject, I would be glad if you could put me into communication with your Soerabaia friends.

For several years past I have been experimenting—off and on—with coir fibre dust mixed with a cheap, adhesive and inflammable substance, pressed into briquettes, the size and shape of a Scotch peat, which makes a good fuel, but has insufficient heat generating power, as only 19 lb. of steam could be got out of it although I stoked all I knew.

Had I got another 6 or 8 lb., it would have done my purpose, but unless some other cheap substance can be found, I must confess to being defeated, as have done many better men before me, who have tried their hand at it but the substance used with the coir-fibre dust would amalgamate with coffee husk equally well and would I know solve the Malang Planters' difficulty, as the coffee husk has in itself sufficient heat generating power for any ordinary steam pressure.—Yours faithfully,

ENGINEER AND PLANTER.

[This letter is sure to attract attention in Java (Malang and Soerabaya) and we shall be ready to give our correspondent's address when applied to. Meantime he might write to the Secretary of the Planters' Association referred to.—ED. *T.A.*]

THE CEYLON LABOUR QUESTION.

Nov. 20.

SIR,—Indentured Labour to Planters would appear to be pretty much what Pork is to Jews. Why it should be so is a little hard to understand. Indentured Labour is of all sorts, is indeed just what you choose to make it. Its sole essential feature, the point in which it differs from free labour is this, that in the contract of service the employed is either represented by, or else has conjoined with him some responsible party, generally a Government Department or a Labour Bureau, which stands *in loco parentis*. All else, the obligations of the employer to the bureau and of the bureau to the employer, are as may have been arranged between the authorities and the representatives of the industries concerned.

When a Ceylon Planter grows inflamed over Indentured Labour he has in mind, I am told, the regulations which obtain in Assam; whereby, he declares, the Planter is converted into a sort of milch cow for his coolies, and the coolies into "fat and greasy citizens" who do a turn of plucking or weeding now and again just to keep them in health and appetite. However this may be (and the description strikes one as a trifle embroidered), I am not concerned to defend the Indian system; my purpose is to emphasise the fact that the Indian system is not the only one.

What is wanted in Ceylon, if I am correctly informed, is an organization which shall secure (1) to the Planter a sufficient and steady supply of labour, and this without recourse to recruiting agents or advances; (2) to the coolie, fair wages and treatment and protection from caprice and inexperience on the part of the employer; (3) to the Government the two *desiderata* of steady employment for the labouring classes, and the abolition of those incentives to drink, debt, and petty crime which are inevitable where the coloured labourer is treated, quâ labourer, otherwise than as a legal minor. To which may be added, (for the solicitude of Government may surely be expected to extend thus far), the promotion of the interests of industrial Capital in so far as they hinge on Labour.

An organization yielding these results now exists on the Diamond Fields (not yet on the Gold Fields) of South Africa: outcome of twenty years experiment and discussion, not without noise and heat. It occurs to me that the Planting Community of Ceylon, in preparation for the revision of its labour arrangements which the encompanying of the tea industry now in progress will render necessary, might find it profitable to investigate the methods of regularising labour which obtain elsewhere, and this method in particular. A system which in disputes between master and servant, substitutes for the tedious untrustworthy processes of law the summary arbitration of skilled labour officials;—which safeguards employer and employed alike from the crimp and the pettifogging lawyer;—which makes it an indictable offence to serve liquor to a registered labourer without his master's written permit;—which treats a registered labourer who should leave the estate without a written permit as a vagrant, and any person who should enter the estate without a written permit as a trespasser;—which guarantees a steady supply of docile labour,—such a system is surely worthy study. For the substantial benefits aforesaid the employer in his turn is under sundry obligations which he may not shirk; but they are obligations which no man, fair-minded and possessed of the gift of working labour—and it is as much a gift as writing poetry—will consider vexatious.

And now what like is the system in operation here in Ceylon? "Just perfect!" exclaims the orthodox Planter in reply. But one has not gone far in search of the perfection before one finds that like the joys of Paradise it is ineffable; no tongue can tell it. One hears how you catch your cooly, and how you keep him, and the way you pay him, and what happens when you and he fall out and invoke the aid of the law; but at the end of the story what appears is not the perfection of the system, but the patience of the Planter. In the light of the famous Labour pamphlet—I hear the unhappy author is hiding in the high jungle until the storm he raised is over—and the subsequent Correspondence, the Ceylon system would seem to have at its root—one might even say as its root—the habitual and hereditary insolvency of the cooly; gathered up and made available for the purposes of the Planter in the person of the kangani, and recorded in the *Tundu*: primarily a *caveat emptor* addressed to whomsover the cooly seeking other employ, may address himself. Now the *tundu* is hardly a document to take into a Court of law, and an Auditor, a London Auditor, would treat it with scant courtesy. Its value is as a string round the coolie's leg; and it is this only, so long as the planters hang together and discourage the mobility of Labour.

The *tundu*, indeed the whole system, is the outcome of the Arcadian phase of the industry, when estates were all in the hands of private owners, and native cultivation had not begun. The planting community was then, and in no sentimental sense, a brotherhood from which any man who should play "dirty tricks," crimping his neighbours' coolies for example, was promptly banished. Camaraderie secured mutual fair-dealing. But private owners are now rapidly giving place to public Companies with neither bowels nor conscience, exercising no more rectitude in their dealings than the Law demands, and as much less as possible. And with the Companies is coming into existence a body of native planters who also will show small respect for the 10th commandment in the articles of manservant and maidservant. All this would not matter were the supply of labour in excess; but it is not in excess; it is, I am told, barely adequate. With demand unscrupulous and supply deficient, a state of things is inevitable, has indeed already begun within a few miles of where I am writing, which will issue disastrously to the employer or not, according as he takes the initiative in reform or leaves the initiative to Government.—Yours etc.,

EGOMET.

MR. J. H. RENTON ON CEYLON TEA IN AMERICA.

Relugas, Madulkelle, Nov. 24th.

Sir,—Although enclosed is a private letter, I think the information contained is sufficiently interesting, coming from an independent source, to warrant its publication.—Yours truly,

A. MELVILLE WHITE.

New York, Oct. 25th.

My Dear White,—I have been some six or seven weeks in the United States and Canada, making myself personally acquainted with the conditions of the tea trade and write to you to say how very pleased I am with all that MacKenzie is doing for us. He is doing his very best with the small funds at his disposal. Six thousand pounds go a very little way in this country, but the lines he has adopted are the right ones, and I do most sincerely hope that for the sake of Ceylon he will continue to act as our delegate for another year or two. He has got in touch with the men, and now that he knows the ropes it will be a great pity if he were to leave and some new man take his place.

I think, however, that the Ceylon Planters might do more themselves to help the introduction of their teas into this market. First, by placing much more on the Colombo market. The American buyer would prefer to buy direct. He does not like the idea of playing second fiddle to London. He buys direct in China and Japan and does not see why he should not do the same in Ceylon; but as long as the London market remains at a penny a pound below the Ceylon market, he does not see the force of sending out any direct orders, and the general complaint is, that direct orders are not executed, owing to the lack of supplies of the proper kinds of tea for this market. The only advantage which the American buyer receives by buying direct at present, is that he gets his packages in good order. I have been into several warehouses and am perfectly ashamed at the condition in which the Ceylon packages arrive from London. 90 per cent are broken and tied up with bits of rope and hoop-ironed all over. This is the result of the teas being re-bulked in London.

Second.—What the Americans want are well-made, well-twisted leaf, light in cup, thin liquor and flavory. I know that it is difficult to make Pekoes and Pekoe Souchongs of this description for America, while the Broken Pekoes must be made differently for London and other markets; for Broken Pekoes are almost unsaleable here. The teas most suitable are Pekoes and Orange Pekoes.

Third.—I hear great complaints about our packages. Our chests are too bulky and clumsy for inland transport. The American prefers the Japan packages and there is a great deal in this complaint, when you consider the immense distances that they have to travel in the States. The Japan packages are made of Momi wood and run as a rule, 23 inches long by 15 broad by 19 deep. These are covered with matting. Now, as we import an immense number of Japan packages, is there any reason why we should not import packages of a size suitable for this market? We can import the same wood as what the Japanese use, viz. 3-8ths inch and the matting to cover packages of this reduced thickness. I think that if we could give them 1st, more teas; second, teas of the quality they want; and third, in the packages they want; there can be no doubt, we should do a much bigger business in Ceylon teas with America.—Yours very truly, J. H. RENTON.

A. Melville White, Esq., Chairman, Planters' Association.

DEAFNESS. An essay describing a really genuine Cure for Deafness, Ringing in Ears &c., no matter how severe or long-standing, will be sent post free.—Artificial Ear-drums and similar appliances entirely superseded. Address THOMAS KEMPE, Victoria Chambers, 19, Southampton Buildings, Holborn London.

A DAY AMONG THE COCO-PALMS.

And such palms! We can well say after wandering among the classic groves of Mirigama that "the half was not told us." "Classic" in the sense of being almost historic as well as most interesting ground in connection with Ceylon planting; for who has not heard of "the Squire of Mirigama" and his famous work among the coconut palms?

After being a successful coffee planter in Dumbara so far back as the "thirties"—('twas sixty years ago!)—Mr. Wright took charge of Peradeniya and there opened up field after field with coffee, and qualified as well as horticulturist in the forties and early fifties. Thence he went as pioneer coffee planter to East Haputale in the fifties, sixties and seventies; and then we find Mr. Wright, after some years' residence in town, renewing his youth and showing both young and old coconut planters "how to do it," by opening and cultivating this model plantation of 250 acres in the vicinity of Mirigama. Its name "Kandangomuwa" means the place where the trunk of a beheaded man was buried—beheaded and buried no doubt "by order of the King" of Kandy. Not far away is the beheading place itself, and the locality being near the Kegalla frontier where there was often fighting between the Kandyan forces and their enemies, it is not unlikely that the punishment of both traitors and prisoners was more common here than in other parts of the country.

The slaughter, however, which has taken place on and around Kandangomuwa, during the past ten years has been of the enemies of the coconut palm. These are principally in the shape of beetles and against them and especially the kandapannuwa or red beetle, Mr. Wright has waged deadly war, not simply on his own plantation, but also throughout the country-side around his plantation. The reason for this is very obvious when one remembers the terrible foe this beetle proves to young coco palms and the difficulty of knowing that they have found a lodgement, until their work is almost fatally done. It is generally too, the most luxuriant and promising, because tender and succulent palm that the red beetle pounces upon, and only after he has burrowed down to the heart and utilised the life-blood for his offspring, do the signs of the attack become externally visible. Occasionally the mischief is perceived before the plant is vitally affected, and if the beetle is got at and dug out at once and the tree properly treated, recovery is possible. But where the beetle has had time to make his deposit and rear his family, it is of the utmost importance that the tree should be cut down and utterly burnt before the swarm of beetles gets away. A single tree neglected, in what is too often the native fashion, until it becomes a perfect nursery of the kandapannuwa, is enough to affect a whole district of plantations. In our walk through Kandangomuwa, we saw but one palm affected by red beetle and it was being promptly and effectually dealt with. But what would be the use of Mr. Wright's watching carefully over his 250 acres, or some 17,000 palms, if in the native gardens all round him, no care were taken to deal with trees affected by the beetle. Perhaps there is no more striking illustration in all the history of agriculture than this of how a careless owner may damage his neighbour's property. In Australia, a Thistle Act was passed to enable careful cultivators to clear up neighbouring properties of a wilderness of thistles, if such were neglected by the owner, at his expense, and in Ceylon in the old coffee days, a

similar Ordinance was often threatened in reference to white weed. But certainly, still more important should it be to have a measure to compel attention to the chief enemy of the coconut palm. The plan adopted by Mr. Wright is, however, an effectual one and very pleasing to his native neighbours. For, as soon as he hears of a palm attacked by red-beetle in his neighbourhood, though outside his own property, he hurries off with kangani and cooly, and pays the owner 50 cents for the privilege of being allowed to cut down and burn it out. At first, of course, this practice kept him busy enough; but now he has his reward in affected trees being few and far between, in the neighbourhood.

We have, however, run too far ahead in discussing one branch of the planter's work, suggested by the name of the estate. Kandangomuwa is about three miles from Mirigama station which is fast becoming a busy centre of traffic. The thriving continuous village along the roadside and a great extension of cultivation in plantations, fruit and vegetable gardens owe very much to the establishment of this railway station, some years after the line was opened to Kandy. The experiment has been a highly successful one and it suggests the question as to whether one or more stations with equally good results might not be established at other points on the line. That is a matter for the General Manager and Government Agents to decide. Mr. Wright had undoubtedly very favourable land on which to plant at Kandangomuwa. It is of that slightly undulating character in which the palm planter delights; while the soil —much of it a sandy loam—is such as palms luxuriate in.

(To be continued.)

PLANTING AND PRODUCE.

Investors and Tea Shares.—There is one point in connection with investment in tea shares that should be noted. At one time the lists of shareholders in tea companies were composed mainly of people having some connection with Anglo-India and the planting interest. Now the general public are investing in tea shares, attracted by the stability of the industry. Both for Indian and Ceylon shares of the better class there is a steady inquiry, and there is no reason why tea shares should not increase in public favour. Investors require some reasonable security, with a probability of steady dividends. Mines and ventures of the lightning-change sort suit speculators, but the investor likes something that does not disturb his rest. Four or five per cent with comparative safety is a boon to the small capitalist, who wearies equally of the small returns upon consols and "gilt-edged" securities and the risks he has to accept if he trusts his money in the ordinary joint-stock project. Under these circumstances tea shares are attractive. In this connection we may mention that Messrs. Gow, Wilson, and Stanton, who devote special attention to the purchase and sale of tea shares, issue a useful list of prices and other particulars, and a quotation from this list will be found in another column.

Indian Tea and the Society of Arts.—We understand that arrangements are being made by the Indian Tea Association, in consultation with the Society of Arts (Indian Section), to have a very interesting paper read at the commencement of the session in January next on the practical side of Indian tea planting, dealing particularly with the improved methods of manufacture since the introduction of machinery, the increased attention paid to sanitation, and care taken of the labour force in supplying them with good water, food, &c., the advantage of railway communication, illustrated by numerous slides showing the gardens buildings, and various other details of an interesting nature. The reader of the paper will be Mr. G W Christison, who has practically devoted the whole of his life to this subject. We hope to give further details later on when the date of the lecture is fixed.

A New Use for Tea.—While experiments are about to be made in England in the direction of tobacco growing, there is a remote prospect that the new woman may use tea in a manner scarcely contemplated by tea planters. "At the house of a well-known lady where I visit," so a West-end physician has informed the representative of a weekly journal, "green tea cigarettes are invariably handed round after dinner; and I know three actresses of celebrity who give 'tea-smoking' parties twice a week, and a coterie of literary ladies in Kensington have formed a small club for the same baleful indulgence." As the supply of green tea in this country is not large, dealers must keep their eyes on this new development. The *Lancet* and the *British Medical Journal* will no doubt be ready with some suitable thunderbolts for the occasion. Meantime, if a lay opinion be of any value, we should say that green-tea cigarettes smoked at short intervals would produce an effect rivalling delirium tremens in variety of sensation and in the number of reptiles to be seen at a single glance.

DR. MARSHALL WARD.

At a meeting of the electors to the Professorship of Botany at Cambridge, held on November 2nd, Dr. Harry Marshall Ward, Sc.D., F.R.S., of Christ's College, Professor of Botany at the Indian Engineering College, Cooper's Hill, was chosen to succeed the late Professor Cardale Babington. Dr. Ward graduated B.A. as a member of Christ's College, obtaining a first-class in the Natural Sciences Tripos, 1879, with distinction in botany. In 1883 he was elected to a Fellowship, and in 1888 was elected a Fellow of the Royal Society.—*O. Mail.*

The new Cambridge Professor of Botany, Dr. Marshall Ward, may be briefly described as a plant physician. At the invitation of the Ceylon Government, he was successful in tracing the fungus which caused the coffee disease whereby the plantations of the island were devastated, and he followed up this brilliant beginning by studying the diseases of the salmon and the potato, the lily and the bean. His acquaintance with the parasitic plant is more intimate than that of any other botanist in the world, and it was owing to this special knowledge of his that he was invited to take charge of his special subject in the forestry department at Cooper's-hill. His presence in Cambridge will make a great change, because hitherto undue attention has perhaps been given in that university to the mere classification of plants.—*Star*, Nov. 5.

Ceylon Tea in America.—It is indeed very gratifying to learn from the letter of the ex-Chairman of our Chamber of Commerce which has been placed at our disposal by the Chairman of the Planters' Association, that our Tea Delegate in America has proceeded to work on the right lines in endeavouring to popularise Ceylon Tea in the great Western Continent, and that, in the opinion of so shrewd and capable a business-man as Mr. Renton, the very best possible use is being made by Mr. Mackenzie of the limited sum placed at his disposal. Coming from an independent source, as Mr. White says, this information is not only interesting but extremely satisfactory, and amply justifies the appointment and continuance in office of Mr. Mackenzie. The American dealers wish to trade direct with Ceylon, and the points which Mr. Renton mentions (about better packages and suitable teas) in this connection will no doubt receive the careful consideration of all concerned. Altogether, Mr. Renton's is a very useful letter.

ELK HUNTING IN CEYLON.

It was a perfect scenting morning, the hoar frost hung thick on the long grass in the deep hollows, and the rhododendrom leaves were silvery with rime. There was hardly light enough to pick our way across a swamp or two we had to cross, and it was not until we reached the jungle edge that the pink tints in the eastern sky gave way to the dull grey of actual day. I had selected an isolated piece of forest for the morning's "draw," and expected to find an old and very large stag which had beaten me more than once. I had a strong pack out, about seven couples of foxhounds and four and a half couples of long-dogs and half-breds, including my grand old seizer, Zulu.

Posting three of my kangaroo hounds at the back of the jungle, so as to cover all the open patana lying between it and the main forest, I took the pack up the hill to the jungle side. I had posted Zulu near the river below me, with orders to the dog-boy to bring him to me on hearing a single note on the horn. June, who had been feathering on what seemed a very good line on the grass, opened at one just inside the jungle. Her first note was followed immediately by a savage "bay," Standing close by the jungle edge, I heard the growling of what I thought was an old stag—a sound I have heard many a time when I have run up against a stag in his lair in thick forest. Then suddenly I heard the unmistakable grunts of a boar. The bay lasted but a few seconds, and as one of the hounds howled in pain the boar rushed past within 10ft. of me, but hidden by the bramble thicket he had "stood" in. He then made a wide circle deep into the jungle. I called for Zulu, and with three coolies followed the pack; my other seizers were quite out of hearing I knew, so I had to do the best I could with what I had got.

After going about 200 yards through very thick "nillu" jungle I reached a clear spot about 20 ft. in diameter, where the undergrowth had been trodden down by deer and pigs. In the middle of this stood two small trees growing close together, and whilst waiting near these, listening to the "tongue" of the hounds as they approached me, I heard the thud of hoofs on my right. Glancing in that direction without moving I saw the boar trotting down a gentle incline in a direction that would take him past me about four yards distant, and the other side of the two trees. Having no weapon with me but my hunting knife, I took, for further security, one cautious step forward and sidewards so as to place the two saplings between the boar and myself. I could see his wicked little eyes glistening as he stood and listened for the approaching pack, now, some 500 to 600 yards behind him The movement I made, though very slight, did not escape his notice. He turned and raised his head, looking straight at me, and, quicker than thought, he was past the trees and upon me. My knife was in my belt, and I was absolutely powerless. Indeed, it was the feeling of my own impotence to deal with such a massive brute that struck me more than anything else.

Past the trees he reared himself upon his hind legs, and to the best of my belief, he had all four feet off the ground as he sprang upon me. I felt the rough bristles of his chest on my face as I fell to his charge. By the most extraordinary good fortune he passed on over me as I lay and rushed straight at two of my coolies who were standing some 10ft. behind me, one of them holding Zulu in slips. I picked myself up as quickly as I could, in time to see both the coolies on their backs and old Zulu's four feet in the air. About 10ft. beyond stood the boar, in thick "nillu," contemplating, as I believe, a fresh attack. But Zulu, having escaped from the hold of the dazed dog-boy, with slips and all, rushed furiously at the boar. In a second he was alongside of him, and in another had him by the ear. By this time the whole pack had come full cry on his line in a regular crash of music all round me. It was frantically exciting, for I could not tell how long the good old dog would hang on. The boar was ploughing his way through the dense undergrowth, dragging Zulu with him, and I feared every moment the slips would catch in the bushes and choke him off. I seized the spear that the dog-boy always carries to meet emergencies of this kind, and rushed down with the pack. Twenty yards or so down the slope I caught the boar up, going slowly, with the whole pack baying at him. Not a hound would touch him though, most of them having had a severe lesson taught them at previous encounters with Sus indicus. It did not take me as long as it takes me to write this to get the spear into the brute's side. Then jamming it well home, I gave the butt end to one of my men to hold, and my knife soon did the rest.

As quickly as possible I got my hounds together, and examined all carefully. Zulu had four skin wounds over his ribs, inflicted, I imagine, when the boar first knocked him over. Rip, one of my Colchester lurchers, I found badly hurt, a large double or treble gash in the thigh cutting through the large tendons and down to the bone. He was the hound I had heard howling at the first bay, and had crawled out on to the patana, where I found him lying. He never recovered, and had to be shot some months afterwards. Hector, a strong, plucky, half-bred dog, had two deep cuts in his hind quarters; Juno, a foxhound, had a deep wound in her chest; and two or three others had a slight skin wound. I had no means of weighing the boar in camp, but he was one of the heaviest I have ever killed, and stood over 32 in. at the withers. His tusks are wonderfully perfect and sharp, and measure just under 9 in.

On looking over the pack I found three of my best foxhounds were missing. This was a shock to me for I naturally feared more damage had been done, and I was just going into the jungle again to look for them when I heard in the distance the familiar note of good old Lifter. Far away on the patana I could see three white objects flashing across to the nearest jungle. Giving the disabled hounds in charge of my coolies I ran my best speed across to where Bountiful, Gossamer, and Lifter were throwing there tongues to a merry tune. I laid on the rest of the pack and soon there was a grand chorus in the big jungle under Sudugalla. I now sent for my three long dogs, and by the time they arrived I heard a "running bay" about a quarter of a mile in, and felt sure then that hounds were running a good stag. The baying of the hounds now began to approach the patana, and getting forward Smiler, my fastest seizer, I was just in time to see a fine stag, some 300 yards off, trotting across the open towards the nearest jungle. Taking advantage of a slight ridge on the patana which lay between me and the stag, I got Smiler well forward, and as soon as I was sure he had viewed him he was slipped. It was a pretty course, but not room enough for the dog to reach him before he dashed into the jungle at full gallop. I could see he had a grand head, the points of his well polished antlers flashing white in the bright morning sun. In a few minutes the leading hounds were racing across the patana on his line, and with a few touches on the horn I hurried up the laggards. I could now guess fairly well his "point," especially as I was sure he was the stag that had beaten me before, and running all I knew to where I supposed he would again face the open and cross the river I saw his galloping slots on the grassy bank of the stream, and at the same moment heard hounds going hard on my right some 300 feet above me.

Getting over the ridge where I had last heard tongue, I again heard a "bay" about half a mile off. The country here was rather broken, sharp spurs running down from the main ridge and forming deep ravines with very steep sides. The jungle on the main ridge being too dense to allow of any pace, I had to take the broken country, thus giving more time than I liked for the stag to get his wind. As I climbed the last hill to the bay, I could hear every now and then the heavy strokes of his fore feet as he pounded at the more venturesome hounds around him. Within three yards of him, I could see his head just above the undergrowth. I gave the order to slip the seizers, but he either winded me or heard me, for away he dashed once more, crashing the "nillu" like a young elephant.

He now made a fresh point, which I more or less anticipated, and, making my best pace, I was just in time to hear the pack topping a distant ridge of forest, about a mile from where the last bay had occurred. Getting down the hill to cross the stream below me I heard, to my astonishment, the baying of hounds quite close to me. I soon found out the cause was a sambur hind, which some of the tail hounds and a couple of the seizers had charged on to in their last burst after the stag broke bay. She was fighting gamely, but I wanted every hound for the hunted stage, so, jumping into the water by her side, I got my knife well home behind her shoulder and dropped her in her tracks. Without waiting a moment, and, the few hounds whipped to me, I hurried on, and over the next ridge, some 300 ft. high, I once more was rejoiced to hear a grand bay in some very dense forest. Feeling sure the stag would not face the open again, nor take water in the adjacent river, I forced my way through one of the most awful thickets of thorns and bamboo I was ever in. The baying of the hounds was getting more and more savage, and, as I got nearer, the noise was almost deafening. The whole pack, barring the seizers which had somehow failed to keep with me, were pressing him close, and each time as I got within a few yards of them the stag broke bay again and again. Once more I think he winded me, for he made another bold bid for freedom by a straight run of about half a mile, but hounds would not be denied, and again they made him stand. He had been fighting hard the whole time, and I heard over and over again the heavy thud of his hoofs as he dashed at, and fortunately missed, some forward hound. At last I got up to him once more, and as I was trying to make out the direction of his head from the points of his antlers, which I could just see over the undergrowth, he rushed straight at me, knocking me over with one of his brow antlers. As I fell I gave him one behind the shoulder with my knife. This failed to stop him, and for another ten minutes or so it was the grandest fight I have ever seen. He charged the hounds right and left, wounding two or three of them with hoofs and horns, but they were now mad with fury, and pressed him harder than ever. Once more he broke away, and stood again near a small tree. Behind this I crept to within less than three feet of him, and then made a quick dash at his shoulder with my knife. The next thing I knew was that I had received two violent blows on my arm and shoulder, and I was lying on the ground with hounds running over me. My knife had gone home, though, this time, and it was his last kick, and a pretty bad one it was for me. He travelled about fifty yards after that and fell dead. He was an enormous stag, carrying a very symmetrical head, and for a Ceylon sambur a large one. The spread of his horns I measured 30¼ in., and the length of beam along the outside curve was 29in. His weight must have been considerably over thirty stone clean, and he stood more than 13 hands at the withers. I had no means of ascertaining the weight exactly, but I have weighed smaller stags that I have killed which have turned the scale at thirty-two stone clean.

It is only fair to mention to the credit of Zulu that he was thrown out after the first bay I slipped him at, being too heavily built a dog to keep up with racing foxhounds. Had he been with me the fight would have been over much sooner. The run lasted two-and-a-half hours. T. FARR.

—*Field.*

SMOKERS SHOULD USE

CALVERT'S DENTO-PHENOLENE.

A FRAGRANT LIQUID DENTIFRICE AND MOUTH-WASH.

Editor of *Health* says:—"The most effective preparation for ridding the mouth of the aroma of tobacco, and leaving a pleasant taste."

Sold in 1*s.* 6*d.*, 2*s.* 6*d.*, and 1 lb. 7*s.* 6*d.* bottles, by Chemists, &c.

F. C. CALVERT & CO., MANCHESTER.

DRUG REPORT.

(From *Chemist and Druggist.*)

London, November 7th.

COCA-LEAVES—Fine Truxillo leaves are reported to be scarce, and held for more money.

VANILLA remains quite firm. It is said that in Mauritius there is nothing left in stock.

ESSENTIAL OIL.—Citronella oil: Native brands quoted on the spot at 1s 4½d to 1s 5d per lb. A fair amount of business has been done for November-December shipment, with Chemical guarantee of purity, at the rate of 1s 3½d per lb, c i f terms for oil packed in drums, and at 1s 2d per lb, c i f terms without guarantee, for November-January steamer shipment.

QUININE—The market is a trifle easier, 20,000 oz second hand German bulk (B & S or Brunswick) having been sold in the course of the week at 13½d to 13¼d per oz. There are sellers today at the last-named figure. The following are the London statistics of quinine:—

	Oz.
Imported in October 1895	17,000
Delivered in October 1895	40,072
Stock on October 31st, 1895	2,069,904
do do 1894	2,896,368

At today's cinchona auctions in Amsterdam (almost the largest ever held in that city) about 4,500 packages Java cinchona—rather over three-fourths of the quantity offered —sold steadily at an average unit of 2½c per half-kilo, showing no alteration compared with the last Amstermad public sales.

INDIAN TEA SALES.

(From *William Moran & Co.'s Market Report.*

CALCUTTA, 27th Nov. 1895.

On the 21st instant, 17.672 chests were offered and 17,605 sold. Prices for all good quality teas were very firm and occasionally marked a rise; common sorts were again slightly lower. Tomorrow 18,000 chests will be offered.

TOTAL QUANTITY OF TEA PASSED THROUGH CALCUTTA FROM 1ST APRIL TO 25TH NOV.

	1895.	1894.	1893.
Great Britain	96,941,284	90,838,733	87,690,370
Foreign Europe	223,988	204,635	257,314
America	881,558	430,537	210,976
Asia	3,227,913	3,044,128	1,135,849
Australia	5,259,049	3,661,952	4,502,279
	106,533,792	98,179,985	93 796,788

(From *Watson, Sibthorp & Co.'s Tea Report.*)

CALCUTTA, 27th Nov. 1895.

17.550 packages changed hands in the sales held on the 21st instant. Good liquoring teas were again in demand and sold at full prices, but other sorts were more or less neglected and found buyers only at a further decline of from 2 to 4 pie per lb. There was a fair amount of business done for the Colonies, Bombay and other places.

The average price of the 17,550 packages sold is As. 7-1 or about 7⅞d per lb. as compared with 19,767 packages sold on the 22nd November 1894 at As. 9-8 or nearly 10d per lb. and 16,185 packages sold on the 23rd November 1893 at As. 6-11 or about 8½d per lb.

The Exports from 1st May to 25th November from here to Great Britain are 96,809,667 lb. as compared with 91,159,735 lb at the corresponding period last season and 88,143,613 lb. in 1893.

NOTE—Last Sale's average was As. 7-3 or nearly 8d per lb.

EXCHANGE—Document bills, 6 month's sight 1s 1-13-16d.

FREIGHT—Steamer—£1-11-3 per ton of 50 c. ft.

VIOLET PERFUME.—In a *Tour Round my Garden*, by Alphonse Karr, translated by Rev. J. G. Wood, the reader is told that "the Violet alone refuses to separate its odour from itself; it is to be met with nowhere but in its own corolla. Perfumers are obliged to make, with the root of the Florentine Iris, a certain false and acrid Violet odour, of which every returning spring compels us to acknowledge the insufficiency." I would like to know if this is still the case, or if the difficulty has been overcome? *William Cuthbertson, Rothesay.*

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce).

Colombo, Dec. 2, 1895.

EXCHANGE ON LONDON; CLOSING RATES, *Bank Selling Rates*:—On demand 1/1¾ to 25-32; 4 months' sight 1/1 25-32 to 13-16; 6 months' sight 1/1 27-32. *Bank Buying Rates*:—Credits 3 months' sight 1/1 29-32 to 15-16; 6 months' sight 1/1 15-16 to 31-32; Docts. 3 months' sight 1/1 15-16 to 31-32; 6 months' sight 1/1 31-32 to 1/2.

COFFEE.—Plantation Estate Parchment on the spot per bushel.—Nominal. Estate Crops in Parchment, delivery per bushel R17 to 18·25.—Noml. Plantation Estate Coffee, f.o.b. on the spot per cwt, R18·25. Plantation Estate Coffee f.o.b. Special Assortment per cwt, R85 to 92·50. Liberian parchment on the spot per bushel, R12·50. Garden and Chetty Parchment on the spot per bushel, R14·50 to 15·50. Garden and Chetty Coffee f.o.b. per cwt.—no quot. Native Coffee f.o.b. per cwt. R72.

TEA.—Average Prices ruling during the week: Broken Pekoe, per lb 55c. Pekoe per lb 40c. Pekoe Souchong, per lb 33c. Broken mixed and Dust, per lb 29c.—Averages of Wednesday's sale.

CINCHONA BARK.—Per unit of Sulphate of Quinine per lb 1½c. to 3c.—1 to 4 %.

CARDAMOMS.—per lb 80c. to R1·80.—Nominal.

COCONUT OIL.—Mill oil per cwt. R15·25 to 15·37. Nominal. Dealer's oil per cwt. R15-12 to 15-25. Coconut oil in ordinary packages f.o.b. per ton R335·00 to 337·50.—Buyers.

COPRA.—Per candy of 560 lb R42·00 to R48·00.

COCONUT CAKE: (Poonac) f.o.b. per ton, R40·00 to 47·50.

COCOA.—(Unpicked & undried) per cwt, R35 to R45.

COIR YARN.—Nos. 1 to 8 { Kogalla per cwt. R7 to 19. / Col. side ,, R6·00 to 16.

CINNAMON.—Nos. 1 & 2 only per lb 62c.—Nominal. Ordinary Assortment, per lb 58c.—Nominal.

PLUMBAGO:—Large Lumps per ton, R150 to 330. Ordinary Lumps per ton, R130 to 290. Chips per ton, R80 to 140. Dust per ton, R30 to 90.

EBONY: per ton.—Government sales on 18th inst.

RICE.—Soolye per bag, R7·12 to R7·90.
Pegu and Calcutta Calunda per bag R7·75 to R8·10.
Coast Calunda per bushel, R3·15 to R3·35.
Muttusamba per bushel, R3·15 to R3·75.
Kadappa and Kuruwe per bushel, R2·95 to 3·24.
Rangoon Raw 3 bushel. bag, R10·00.

FREIGHTS.

Cargo.	Per ton London per str. s. d.	N. York per str. s. d.	Trieste per str. s. d.	Mar'lles per str. R. c.	Hamb', Bremen &c. s. d.
Tea	20/	..	25/	25	22/6
Coconut Oil	22/6	..	25/	25	22/6
Plumbago	20/	..	25/	25	22/6
Coconuts in bags	20/	..	25/	25	22/6
Other Cargo	20/	..	25/	25	22/6
Broken Stowage	10/	..	25/	25	22/6
SAILERS.					
Coconut Oil	..	32/6	..	..	..
Plumbago	..	32/6	..	..	..

New York rates per steamer with transhipment 12/6 @ 15/ above London rates.

LOCAL MARKET.

By Mr. A. M. Chittambalam, 7, Baillie St., Fort.

Colombo, Nov. 30th, 1895.

Garden Parchment :—	R15·00 to 15·25	per bushel
Chetty do :—	15·50 to 16·00	do
Native Coffee :—	65·00 to 66·00	per cwt
do f.o.b. :—	70·00	do
Liberian Parchment,	13·00	per bushel (nominal)
do Coffee,	67·00	per cwt
CARDAMOMS.—	0·70 to 2·00	per lb (nominal)
COCOA.—(nominal)	35·00 to 45·00	per cwt do
RICE.—Market is Steady :—		
Kazla	R6·50 to 6·75	per bag
Soolye	7·00 to 7·50	do
Callunda	7·75 to 8·00	
Coast Callunda	3·00 to 3·06	per bushel
Kuruve (New)	2·75 to 2·87	do
Muttusamba	3·25 to 3·50	do

CINNAMON.—Quoted Nos. 1 to 4, at 58c and Nos. 1 and 2 at 62 cents per lb (nominal)		
CHIPS.—R80·00 per candy (nominal)		
COCONUTS.—Ordinary	R35·00 to 38·00	per 1,000 (nominal)
do Selected	40·00 to 43·00	do do
COCONUT OIL.—	15·12 to 15·25	per cwt do
COPRA.—Market steady:—		
Kalpitiya	R46·50 to 47·00	per candy
Marawila	44·00 to 46·00	do
Cart Copra	39·00 to 43·00	do
POONAC.—Gingelly	65·00 to 72·50	per ton
Chekku	80·00 to 85·00	do
Mill (retail)	55·00 to 60·00	do
EBONY.—quotations at	R100 to R185	(nominal)
SATINWOOD.—cubic feet	1·50 to 2·12	do
HALMILLA.— do	1·50 to 1·75	do
KITUL FIBRE.—Quoted at R30·00 per cwt (nominal)		
PALMYRA FIBRE.—Quoted nominally:—		
Jaffna Black.—Cleaned (Scarce)		
do Mixed	do	
Indian do	R7·00 to 9·00	per cwt.
Do Cleaned	10·00 to 14·00	
SAPAN WOOD.—Quoted	60·00 to 00·00	per ton
KEROSINE OIL—American	7·00 to 7·10	Per case
do Russian	3·25 to 3·30	per tin
KAPOK.—Cleaned f. o.b :—	27·00 to 27·50	(nominal)
do Uncleaned	6·00 to 6·50	(Scarce)
Croton Seed	13·00 to 17·00	do
Nux. Vnomica	2·50 to 3·00	per cwt

CEYLON EXPORTS AND DISTRIBUTION.

1894-1895.

COUNTRIES.	Coffee cwt. Plan-tation	Coffee cwt. N'tive	Coffee cwt. Total.	Cinchona. 1895 B'nch & Trunk lb	Tea 1895 lb.	Tea 1894 lb.	Cocoa cwt.	C'moms lb.	Cinnamon. Bales lb.	Cinnamon. Chips lb.	Coconut Oil. 1895 cwt.	Coconut Oil. 1894 cwt.	P'bgo. 1895 cwt.
To United Kingdom	42569	36	42605	615827	76240473	67935530	20187	194583	1174627	343453	133897	182004	99486
,, Austria	3308	100	3408	..	4413	5252	161	..	6000	5600	22796	27947	..
,, Belgium	25	..	25	90728	10913	6671	917	..	27000	22100	3904	9810	14646
,, France	1233	1056	2289	7900	34031	18366	473	80	24300	25200	404	483	433
,, Germany	649	..	649	..	233316	141016	784	41893	242815	242200	13683	23970	34199
,, Holland	1	..	1	20474	11381	600	..	..	..	..	401	..	4069
,, Italy	1	..	1	21647	8376	3821	50	..	102000	112563	706	8260	140
,, Russia	152	..	152	..	283198	34768	..	..	..	..	..	3906	..
,, Spain	..	..	..	..	57835	45253	45	..	153500	6200	101	99	..
,, Sweden	..	..	..	..	750	500	..	..	..	..	..	..	..
,, Turkey	..	..	..	..	9217	7655	..	..	..	..	..	..	..
,, India	523	1121	1644	..	672188	830171	2	69975	1100	50	8887	22034	400
,, Australia	7185	681	7866	..	8328256	6908446	72	112	5700	12192	1983	3155	871
,, America	740	74	814	136501	370825	191467	1041	5772	115000	22400	136515	111458	138582
,, Africa	..	..	..	..	133872	71491	..	274	..	..	166	..	..
,, China	121	..	121	..	312356	154382	33	2204	65400	..	1262	*1710	..
,, Singapore	2	..	2	..	29456	18991	50	..	..	..	16564	3709	..
,, Mauritius	372	802	1174	896	156015	95295	..	..	..	..	..	..	..
,, Malta	..	..	..	..	86245	45315	..	..	..	..	..	..	..
Total exports from 1st Jan. to 2nd December. 1895	56881	3870	60751	893973	86983116		23815	313893	1916442	791878	341269		292825
do 1894	26558	652	27210	2425549	76513885		18222	242806	1751813	529314	398545		302525
do 1893	49348	2451	51799	3238403	75031570		26919	369309	1808017	576294	329656		318034
do 1892	37361	2273	39634	6474937	66756372		15755	343776	1843536	552435	536156		499690

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From S. Figgis & Co.'s Fortnightly Price Current, London, 7th November, 1895.)

EAST INDIA. Bombay, Ceylon, Madras Coast and Zanzibar.	QUALITY.	QUOTATIONS
ALOES, Socotrine	Good and fine dry liver...	£3 10s a £6
Zanzibar & Hepatic	Common and good ...	30s a 80s
BARK, CINCHONA Crown	Ledgeriana chips ...	2d a 3½d
	Original stem	1½d a 3d
...	Renewed	2d a 4½d
	Chips	1¼d a 2d
BEES' WAX, White ...	Sli. sof. to gd. hard brig.	£7 10s a £8
Yellow ...	Dark to fair	£6 a £7
Mauritius & Madagascar..	Fair to fine	£6 10s a £7
CAMPHOR, China .. / Japan ..	Fair average quality..	200s a 205s
CARDAMOMS—		
Allepee	Fair to fine clipped ..	1s a 2s 6d
Mangalore	Bold, bright, fair to fine ..	1s 10d a 2s 8d
Malabar	Clipped, bold, bright, fine	1s 8d a 2s 3d
Ceylon	Middling, stalky & lean	1s 3d a 1s 6d
Tellicherry	Good to fine	1s 6d a 1s 8d
	Brownish	9d a 1s 4d
Mysore	Fair to fine plmp. clip'd.	1s 9d a 3s 6d
	,, ,, small ...	1s 2d a 1s 5d
Long Ceylon ...	Shelly to good	1s 1d a 2s 11d
	Seeds ...	2s a 2s 1d
CASTOR OIL, 1sts	White	2¾d a 3d
2nds	Fair and good pale ...	2¼d a 2½d
CHILLIES, Zanzibar ...	Fair to fine bright ..	30s a 35s
	Ord'y. and middling ...	26s a 30s
CINNAMON, 1sts	Ord'y. to fine quill ..	1s 1d a 1s 4d
2nds	,, ,, ,, ,, ...	11d a 1s
3rds	,, ,, ,, ,, ...	9½d a 10d
4ths & 5ths	Woody and hard ..	9d
Chips	Good ordinary ..	2⅞d
CLOVES, Zanzibar and Pemba.	Fair to fine bright ...	2 1-16d a 2½d
	Common dull and mixed	1⅞d a 2d
,, STEMS	Common to good ...	1d
COCULUS INDICUS ...	Fair sifted...	8s a 12s
COFFEE	Bold to fine bold color	105s a 112s
	Midding to fine mid	97s 6d a 101s
	Low mid and low grown	95s a 99s
COLOMBO ROOT... ...	Good to fine bright sound	10s a 20s
	Ordinary & middling ...	7s a 8s
CROTON SEEDS, sifted...	Ordinary to fine fresh ...	48s
CUTCH	Fair to fine dry ...	20s a 32s
DRAGONS BLOOD, Zan.	Ordinary to good drop ...	20s a 50s
GALLS, Bussorah & Turkey	Fair to fine dark blue ...	50s a 52s 6d
	Good white and green ..	40s a 47s 6d
GINGER, Calicut Cut A	Good to fine bold ..	68s a 70s
B & C	Small and medium ...	52s 6d a 57s 6d
Cochin Rough...	Common to fine bold .	33s a 37s
,, ...	Small and D's ...	30s a 33s
Bengal Rough,	Fair to good ...	21s
GUM AMMONIACUM ...	Blocky to fine clean ...	20s a 50s
ANIMI, washed ...	Picked fine pale in sorts	£9 a £11
	Part yellow & mixed do.	£8 10s a £8 15s
	Bean & Pea size ditto ..	£4 a £7 10s
	Amber and red bold ..	£5 a £7
scraped...	Medium & bold sorts ..	£4 a £7
ARABIC E.I. & Aden...	Good to fine pale frosted sifted	42s 6d a 50s
	Sorts, dull red to fair ...	32s 6d a 40s
Ghatti ...	Good to fine pale selected	35s a 50s
	Sorts middling to good	28s a 34s
Amrad cha.	Good and fine pale ...	35s a 50s
	Reddish to pale brown ...	27s 6d a 32s
Madras ...	Dark to fine pale ...	20s a 33s 6d
ASSAFŒTIDA	Fair to fine pinky block and drop	45s a 80s
	Ordinary stony to midling	15s a 40s
KINO	Fair to fine bright ..	£25 a £30
MYRRH, picked	Fair to fine pale ...	£4 10s a £6
Aden sorts	Middling to good ...	60s a 70s
OLIBANUM, drop...	Fair to fine white ...	30s a 55s
,,	Reddish to middling ...	20s a 25s
pickings...	Middling to good pale ...	8s a 14s
siftings ..	Slightly foul to fine ..	9s a 13s
INDIARUBBER	Red hard clean ball ...	2s 1d a 2s 5½d
East African Ports, Zanzibar and Mozambique Coast	White softish ditto ...	1s 8d a 2s 2d
	Unripe root	10d a 1s 5d
	Liver and Lamu Ball ...	1s 8d a 2s 2d
	Sausage, ordinary to fine	1s 3d a 2s
	,, without sticks	2s 1d a 2s 4d
Assam	Good to fine ...	1s 7d a 2s 2d
	Common foul & middling	9d a 1s 5d
Rangoon	Fair to good clean ...	1s 6d a 2s 2d
Madagascar, Tamatave, Majunga and Nossibe	Good to fine pinky & white	2s 2d a 2s 6d
	Fair to good black ...	1s 6d a 1s 10d
ISINGLASS or FISH MAWS Tongue.	good to fine pale ...	1s 10d a 2s 9d
	dark to fair ..	9d a 1s 6d
Bladder Pipe	Clean thin to fine bold...	1s 8d a 2s 9d
Purse...	Dark mixed to fine pa'e...	5d a 1s 3d

EAST INDIA. Bombay, Ceylon, Madras Coast and Zanzibar.	QUALITY.	QUOTATIONS.
Kurrachee Leaf ...	Good and fine pale	2s 6d a 3s 2d
	Red part thin ..	1s 7d a 2s 3d
INDIGO Bengal	Middling to fine violet...	4s 6d a 5s 2d
	Ordinary to middling ...	3s a 4s 3d
Kurpah	Fair to good reddish violet	2s 7d a 3s 1d
	Ordinary and middling	1s 6d a 2s 4d
Madras (Dry Leaf)	Middling to good ...	1s 7d a 2s 10d
	Low to ordinary ...	7d a 1s 5d
IVORY—Elephants' Teeth		
60 lb & upwards ...	Soft sound	£59 a £65
over 30 & under 60 lb	,, ,,	£50 a £62 10s
60 a 100 lb. ...	Hard ,, ,,	£38 a £47
Scrivelloes	Soft ,, close & wide	£22 a £35 10s
Billiard Ball Pieces 2⅝ a 3½ in	Sound soft	£90 10s a £103
Bagatelle Points ...	Sli. def. to fine sound soft	£54 a £63
Cut Points for Balls ...	Shaky to fine solid sd. sft	£67 a £76
Mixed Points & Tips...	Defective, part hard ..	£33 a £46
Cut Hollows	Thin to thick to sd. sft	£25 a £41
Set Horse Teeth — ... ⅔ a 1¼ lb.	Straight crkd part close	1s a 3s 1d
MYRABOLANES, Bombay	Bhimlies I, good & fine pale	7s 6d a 7s 9d
	,, II, fair pickings	3s 6d a 4s
	Jubblepore I, good & fine pale	5s 3d a 7s
	,, II, fair rejections	3s 6d a 4s 6d
	Vingorlas, good and fine	4s 6d a 5s 6d
Madras, Upper Godavery	Good to fine picked ...	5s a 5s 6d
,, ,, ..	Common to middling ...	3s 3d a 4s
Coast	Fair	4s 6d a 4s 9d
Pickings ...	Burnt and defective ..	3s 3d a 3s 9d
MACE, Bombay ...	Dark to good bold pale ..	1s 6d a 2s
	W'd com. dark to fine bold	4d a 6d
NUTMEGS, ,, ...	65's a 81's	2s 11d a 3s 2d
	90's a 125's	1s 5d a 2s
NUX VOMICA	Fair to good bold fresh	3s a 8s
OIL, CINNAMON ...	Ordinary to fair	4d a 1s 3d
CITRONELLE ...	Bright & good flavour .	1d
LEMONGRASS ...	,, ,, ,, ...	2d
ORCHELLA WEED Ceylon ..	Mid. to fine, not woody	11s a 15s
Zanzibar	Picked clean flat leaf ...	12s a 18s
Mozambique	,, wiry	22s a 32s
PEPPER—		
Malabar, Black sifted ...	Fair to bold heavy	2 5-16d a 2½d
Alleppee & Cochin ..	,, good ,, ...	
Tellicherry, Black ..	,, ,,	
PLUMBAGO, Lump ...	Fair to fine bright bold	15s a 16s
	Middling to good small	3s 6d a 13s
Chips ...	Dull to fine bright	1s 6d a 8s 6d
Dust ...	Ordinary to fine bright...	2s a 6s
RED WOOD	Fair and fine bold ...	£4 a £4 10s
SAFFLOWER, Bengal	Good to fine pinky nominal	75s a 90s
	Ordinary to fair ...	60s a 70s
	Inferior and pickings ...	30s a 50s
SANDAL WOOD, Logs .	Fair to good flavour ...	£30 a £50
,, ,, Chips..	Inferior to fine	£4 a £8
SEEDLAC	Ordinary to fine bright	50s a 100s
SENNA, Tinnevelly ...	Good to fine bold green	6d a 8d
	Fair middling medium	3d a 5½d
	Common dark and small	1d a 2¼d
Bombay ..	Ordinary to good ...	1d a 2d
SHELLS, M.-o'-P. ..	EGYPTIAN—bold clean .	55s a 60s
	medium thin and stout	65s a 82s 6d
	chicken, part oysters	62s 6d a 77s 6d
large	BOMBAY—poor to fine thin	67s 6d a 75s
medium part stout	clean part good color	75s a 82s 6d
chicken part stout	,, ,, ,,	72s 6d a 87s 6d
oyster & broken pcs	,, ,, ,,	75s a 82s 6d
Mussel	medium and bold sorts	37s a 45s
	small and medium sorts	15s a 30s
Lingah Ceylon ..	Thin and good stout sorts	9s a 20s
TAMARINDS	Mid. to fine black not stony	9s a 11s
	Stony and inferior ...	4s a 6s
TORTOISE-SHELL ...	Sorts, good mottle, heavy	24s a 30s
Zanzibar and Bombay	Pickings thin to heavy...	6s a 21s 6d
TURMERIC, Bengal ...	Leanish to fine plump finger ...	7s 3d a 8s 6d
Madras ...	Fin. fair to fine bold brgt	8s 6d a 9s 6d
,, ...	Mixed middling	7s 6d a 8s
,, ...	Bulbs	6s 6d a 7s 6d
Cochin ...	Finger	7s a 7s 6d
	Bulbs	5s 6d a 7s 6d
VANILLOES,		
Bourbon, 1sts ...	Fine, cryst'ed 5 to 9 in.	22s a 33s
Mauritius, 2nds...	Foxy & reddish 5 to 8 in.	15s a 24s
Seychelles, 3rds ..	Lean & dry to mid. under 6 in. ...	12s a 15s
Madagascar, 4ths..	Low, foxy, inferior and pickings	6s a 10s